STIC Search Report
EIC 1700

STIC Database Tracking Number: 214834

TO: Ben Sackey
Location: REM 5B31
Art Unit : 1624
February 20, 2007

Case Serial Number: 10/802541

From: Kathleen Fuller
Location: EIC 1700
REMSEN 4B28
Phone: 571/272-2505
Kathleen.Fuller@uspto.gov

Search Notes

I searched this in Casreact and as a prep in the CA database.

FOR OFFICIAL USE ONLY

ACCESS DB # 214834

PLEASE PRINT CLEARLY

Ms. Fuller

Scientific and Technical Information Center

SEARCH REQUEST FORM

Requester's Full Name: Ben Sackey Examiner #: 13489 Date: 02/03/07

Art Unit: 1624 Phone Number: 2-0704 Serial Number: 10/~~[illegible]~~802,541

Location (Bldg/Room#): Rm 3B31 (Mailbox #): _____ Results Format Preferred (circle): PAPER DISK

****

To ensure an efficient and quality search, please attach a copy of the cover sheet, claims, and abstract or fill out the following:

Title of Invention: Process for producing 4-(1H-1,2,4-triazol-1-ylmethyl)benzonitrile

Inventors (please provide full names): Wachwa et al

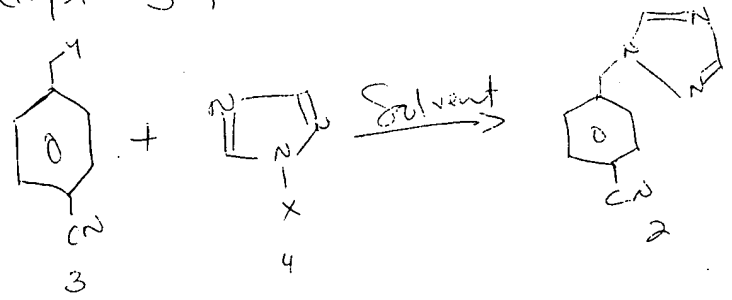
Earliest Priority Date: 03/17/04

Search Topic:

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc., if known.

For Sequence Searches Only *Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

A process for preparing 4-(1H-1,2,4-triazol-1-ylmethyl)benzonitrile of formula (2), which comprises reacting a salt of 1,2,4-triazole of formula (4) with tolunitrile of formula (3) in the presence of a solvent, stirring the mixture for 2 hrs, then adding demineralized H_2O and extracting with dichloromethane, distilling out the organic layer and crystallizing same to obtain the final product.



Y is halogen

X is alkali metal

solvent is tetrahydrofuran dimethylformamide

Crystallizing agent → alcohol

****

STAFF USE ONLY

Searcher: K. Fuller

Searcher Phone #: _____

Searcher Location: _____

Date Searcher Picked Up: _____

Date Completed: 2/20/07

Searcher Prep & Review Time: 40

Online Time: 27

Type of Search

_____ NA Sequence (#)

_____ AA Sequence (#)

3 Structure (#)

_____ Bibliographic

_____ Litigation

_____ Fulltext

_____ Other

Roep Caresct subset

Vendors and cost where applicable

✓ STN _____ Dialog

_____ Questel/Orbit _____ Lexis/Nexis

_____ Westlaw _____ WWW/Internet

___ In-house sequence systems

___ Commercial ___ Oligomer ___ Score/Length

___ Interference ___ SPDI ___ Encode/Transl

_____ Other (specify)

=> file casrea
FILE 'CASREACT' ENTERED AT 13:48:52 ON 20 FEB 2007

FILE CONTENT:1840 - 18 Feb 2007 VOL 146 ISS 8

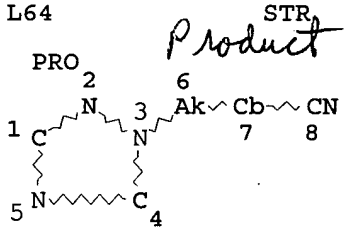
New CAS Information Use Policies, enter HELP USAGETERMS for details.

****
*
* CASREACT now has more than 12 million reactions *
*
****

Some CASREACT records are derived from the ZIC/VINITI database (1974-1999) provided by InfoChem, INPI data prior to 1986, and Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d que
L64 STR



Product

NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
GGCAT IS UNS AT 7
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 8

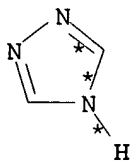
STEREO ATTRIBUTES: NONE
L66 14 SEA FILE=CASREACT SSS FUL L64 (37 REACTIONS)

14 CA references

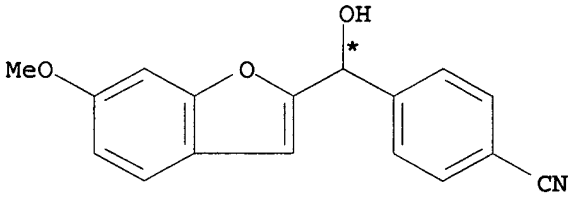
=> d l66 fhit bib abs ind

L66 ANSWER 1 OF 14 CASREACT COPYRIGHT 2007 ACS on STN

RX(23) OF 85 ...AM + AH ===> **AT**

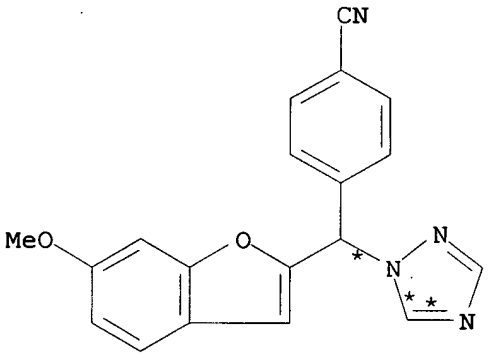


AM



AH

(23) →



AT
YIELD 73%

RX(23) RCT AM 288-88-0

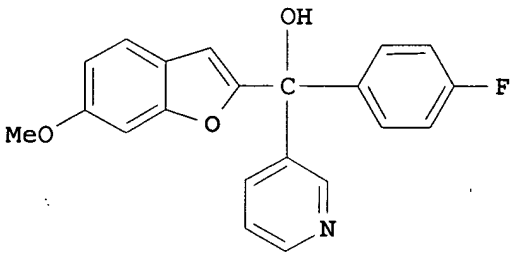
STAGE(1)
RGT AO 7719-09-7 SOCl2
SOL 75-05-8 MeCN
CON SUBSTAGE(1) 0 deg C
SUBSTAGE(2) 1 hour, 10 deg C

STAGE(2)
RCT AH 878196-29-3
RGT AP 584-08-7 K2CO3
SOL 75-05-8 MeCN
CON 5 days, room temperature

PRO AT **683764-20-7**
NTE regioselective

AN 144:274213 CASREACT
TI Potent CYP19 (Aromatase) 1-[(Benzofuran-2-yl)(phenylmethyl)pyridine, -imidazole, and -triazole Inhibitors: Synthesis and Biological Evaluation
AU Saberi, Mohammed Reza; Vinh, Tai Ky; Yee, Sook Wah; Griffiths, B. J. Nathan; Evans, Peter J.; Simons, Claire
CS Medicinal Chemistry Welsh School of Pharmacy, Cardiff University, Cardiff, CF10 3XF, UK
SO Journal of Medicinal Chemistry (2006), 49(3), 1016-1022
CODEN: JMCMAR; ISSN: 0022-2623
PB American Chemical Society
DT Journal

LA English
GI



I

AB The synthesis of a series of novel 1-[(benzofuran-2-yl)phenylmethyl]pyridine, -imidazole, and -triazole derivs. is described. All the compds. were evaluated in vitro for inhibitory activity against aromatase (P 450AROM, CYP19), using human placental microsomes. The 6-methoxy- and 6-hydroxy-substituted benzofuran derivs. were shown to be potent CYP19 inhibitors (IC50 = 0.01-1.46 μM) with activity greater than that observed for the unsubstituted parent compds. and inhibitory activity comparable with or greater than the reference compound arimidex (IC50 = 0.6 μM). Six of the benzofuran derivs. were subjected to in vitro cytotoxicity assays, using rat liver hepatocytes with cytotoxicity determined from alteration in cell morphol. and lactate dehydrogenase enzyme retention over a period of 24 h, and selectivity (CYP17, 17β-HSD types 1 and 3, CYP24, and CYP26) determination; negligible inhibitory activity was observed, suggesting a good selectivity for CYP19. The pyridine benzofuran I containing the 4-fluorophenyl group was the most promising (IC50 = 44 nM; LC50 >100 μM) compared with arimidex (IC50 = 600 nM; LC50 > 200 μM).

CC 28-10 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1

ST benzofuranylphenylmethyl pyridine imidazole triazole prepn aromatase inhibitor

IT Liver
(hepatocyte; preparation and cytotoxicity of 1-[(benzofuran-2-yl)phenylmethyl]-pyridine, -imidazole, and -triazole derivs.)

IT Cytotoxicity
(preparation and cytotoxicity of 1-[(benzofuran-2-yl)phenylmethyl]-pyridine, -imidazole, and -triazole derivs.)

IT Structure-activity relationship
(testosterone A-ring reductase-inhibiting; preparation of 1-[(benzofuran-2-yl)phenylmethyl]-pyridine, -imidazole, and -triazole derivs. as aromatase inhibitors)

IT 440365-05-9, Cytochrome P 450 17
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(preparation of 1-[(benzofuran-2-yl)phenylmethyl]-pyridine, -imidazole, and -triazole derivs. and their inhibition of steroidogenic enzymes)

IT 683764-16-1P 683764-17-2P 683764-18-3P 683764-19-4P 683764-20-7P
683764-21-8P 683764-22-9P 683764-23-0P 683764-24-1P 683764-25-2P
683764-26-3P 683764-27-4P 878196-26-0P 878196-27-1P 878196-28-2P
RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological activity); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation of 1-[(benzofuran-2-yl)phenylmethyl]-pyridine, -imidazole, and -triazole derivs. as aromatase inhibitors)

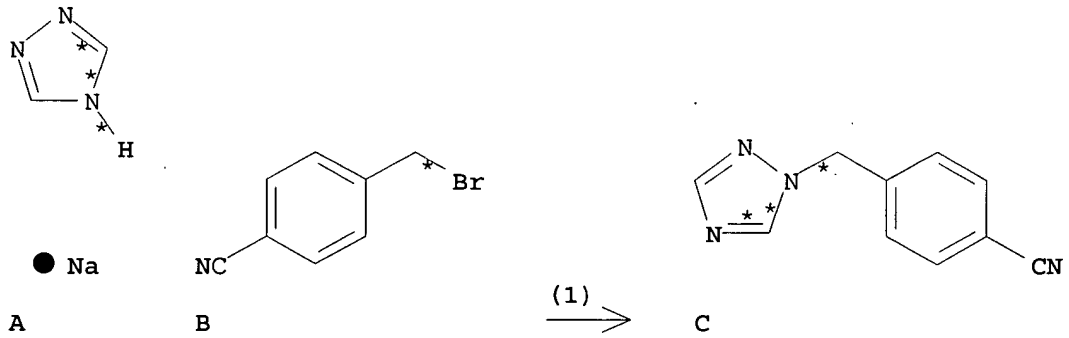
IT 9039-48-9, Aromatase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(preparation of 1-[(benzofuran-2-yl)phenylmethyl]-pyridine, -imidazole, and -triazole derivs. as aromatase inhibitors)
IT 95-01-2, 2,4-Dihydroxybenzaldehyde 99-81-0 110-87-2 288-32-4, Imidazole, reactions 288-88-0, 1H-1,2,4-Triazole 383-53-9 403-29-2 536-38-9 619-41-0 673-22-3 2632-13-5 2632-14-6 20099-89-2 21970-14-9, 3-Pyridylmagnesium bromide
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of 1-[(benzofuran-2-yl)phenylmethyl]-pyridine, -imidazole, and -triazole derivs. as aromatase inhibitors)
IT 72041-59-9P 75158-60-0P 82158-47-2P 117238-42-3P 309290-76-4P 683764-13-8P 683764-14-9P 683764-15-0P 878196-22-6P 878196-23-7P 878196-24-8P 878196-25-9P 878196-29-3P 878196-30-6P 878196-31-7P 878196-32-8P 878196-33-9P 878196-34-0P 878196-35-1P 878196-36-2P 878196-37-3P 878196-38-4P 878196-39-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of 1-[(benzofuran-2-yl)phenylmethyl]-pyridine, -imidazole, and -triazole derivs. as aromatase inhibitors)
RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d l66 fhit bib abs ind 2-14

L66 ANSWER 2 OF 14 CASREACT COPYRIGHT 2007 ACS on STN

applicant

RX(1) OF 1 A + B ===> C



RX(1) RCT A 41253-21-8, B 17201-43-3

STAGE(1)
SOL 68-12-2 DMF
CON SUBSTAGE(1) 25 - 30 deg C
SUBSTAGE(2) 30 minutes, 10 deg C
SUBSTAGE(3) 2 hours, 10 - 15 deg C

STAGE(2)
RGT D 7732-18-5 Water

PRO C **112809-25-3**
AN 143:306322 CASREACT
TI Condensation process for producing 4-[(1H-1,2,4-triazol-1-

yl)methyl]benzonitrile from an alkali metal salt of 1,2,4-triazole and a 4-(halomethyl)benzonitrile

IN Wadhwa, Lalit Kumar; Saxena, Rahul
PA India

SO U.S. Pat. Appl. Publ., 4 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005209294	A1	20050922	US 2004-802541	20040317

PRAI US 2004-802541 20040317

AB A process for producing 4-[(1H-1,2,4-triazol-1-yl)methyl]benzonitrile comprises reacting an alkali metal salt of 1,2,4-triazole (e.g., the sodium salt) with a 4-(halomethyl)benzonitrile [e.g., 4-(bromomethyl)benzonitrile] in the presence of DMF, adding water, extracting the mixture with dichloromethane, and distilling off the organic solvent.

IC ICM A61K031-4196
ICS C07D249-08
NCL 514383000
CC 28-10 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 45
ST triazolylmethylbenzonitrile prepn triazolyl sodium condensation bromomethylbenzonitrile

IT Nitriles, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(aromatic, 4-[(1H-1,2,4-triazol-1-yl)methyl]benzonitrile; condensation process for producing 4-[(1H-1,2,4-triazol-1-yl)methyl]benzonitrile from an alkali metal salt of 1,2,4-triazole and a 4-(halomethyl)benzonitrile)

IT Distillation
Extraction
(in a condensation process for producing 4-[(1H-1,2,4-triazol-1-yl)methyl]benzonitrile from an alkali metal salt of 1,2,4-triazole and a 4-(halomethyl)benzonitrile)

IT Phase separation
(liquid-liquid; in a condensation process for producing 4-[(1H-1,2,4-triazol-1-yl)methyl]benzonitrile from an alkali metal salt of 1,2,4-triazole and a 4-(halomethyl)benzonitrile)

IT Condensation reaction
(of an alkali metal salt of 1,2,4-triazole with a 4-halotoluenenitrile to give 4-[(1H-1,2,4-triazol-1-yl)methyl]benzonitrile)

IT 874-86-2, 4-(Chloromethyl)benzonitrile 874-88-4, 4-(Iodomethyl)benzonitrile 17201-43-3, 4-(Bromomethyl)benzonitrile 41253-21-8, 1,2,4-Triazole sodium salt 41253-22-9 41253-23-0, 1,2,4-Triazole potassium salt
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation process for producing 4-[(1H-1,2,4-triazol-1-yl)methyl]benzonitrile from an alkali metal salt of 1,2,4-triazole and a 4-(halomethyl)benzonitrile)

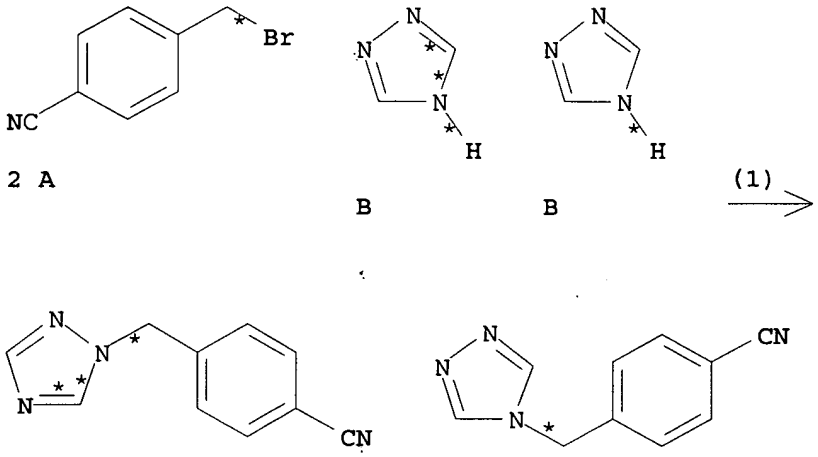
IT 112809-25-3P, 4-[(1H-1,2,4-Triazol-1-yl)methyl]benzonitrile
RL: SPN (Synthetic preparation); PREP (Preparation)
(condensation process for producing 4-[(1H-1,2,4-triazol-1-yl)methyl]benzonitrile from an alkali metal salt of 1,2,4-triazole and a 4-(halomethyl)benzonitrile)

IT 67-63-0, 2-Propanol, uses 68-12-2, Dmf, uses 75-09-2, Dichloromethane, uses 108-20-3, Diisopropyl ether 108-88-3, Toluene, uses 109-99-9, Thf, uses 7732-18-5, Water, uses
RL: NUU (Other use, unclassified); USES (Uses)

(solvent; in a condensation process for producing 4-[(1H-1,2,4-triazol-1-yl)methyl]benzonitrile from an alkali metal salt of 1,2,4-triazole and a 4-(halomethyl)benzonitrile)

L66 ANSWER 3 OF 14 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 1 2 A + 2 B ===> C + D



2 A B B

C D

RX(1) RCT A 17201-43-3, B 288-88-0
RGT E 584-08-7 K2CO3
PRO C **112809-25-3**, D 112809-27-5
CAT 7681-11-0 KI
SOL 67-64-1 Me2CO
CON SUBSTAGE(1) room temperature
SUBSTAGE(2) 8 hours, 55 deg C
SUBSTAGE(3) 55 deg C -> room temperature
NTE other product also detected, regioselective, product ratio = 87:11:2, industrial manufacture

AN 142:482047 CASREACT
TI A precipitation method for the separation of the letrozole precursor 4-[1-(1,2,4-triazolyl)methyl]benzonitrile from its 4-[1-(1,3,4-triazolyl)methyl]benzonitrile byproduct isomer
IN Amala, Kompella; Rachakonda, Sreenivas; Adibhatla, Kalisatya Bhujangarao; Venkaiah Chowdary, Nannapaneni
PA Natco Pharma Limited, India
SO PCT Int. Appl., 14 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2005047269	A1	20050526	WO 2003-IN357	20031114

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,

TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2003282380 A1 20040606 AU 2003-282380 20031114

PRAI WO 2003-IN357 20031114

AB Separation of the letrozole precursor 4-[1-(1,2,4-triazolyl)methyl]benzonitrile from the unwanted byproduct 4-[1-(1,3,4-triazolyl)methyl]benzonitrile, both formed by the condensation reaction of 4-(bromomethyl)benzonitrile with 1,2,4-triazole, is achieved by: (A) dissolving the resultant crude isomeric mixture in dichloromethane or chloroform; (B) adding 10-14% iso-Pr alc. and hydrochloric acid to the resulting solution; (C) adding diisopropyl ether to precipitate the undesired 4-[1-(1,3,4-triazolyl)methyl]benzonitrile isomer as its hydrochloride; (D) filtering off the undesired isomer hydrochloride; (E) distilling off the filtrate completely; (F) adding dilute aqueous sodium hydroxide solution and dichloromethane to the residue to liberate the required 4-[1-(1,2,4-triazolyl)methyl]benzonitrile isomer as its free base; (G) evaporating the separated dichloromethane layer and charging hexane or petroleum ether; and (H) centrifuging the resultant 4-[1-(1,2,4-triazolyl)methyl]benzonitrile product and washing with hexane or petroleum ether.

IC ICM C07D249-08

CC 28-10 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 45

ST triazolylmethylbenzonitrile isomer sepn pptn; letrozole precursor triazolylmethylbenzonitrile isomer sepn pptn

IT Centrifugation
Distillation
Filtration
Neutralization
Washing
(in a precipitation method for the separation of the letrozole precursor 4-[1-(1,2,4-triazolyl)methyl]benzonitrile from its 4-[1-(1,3,4-triazolyl)methyl]benzonitrile byproduct isomer)

IT Condensation reaction
(of 1,2,4-triazole with 4-(bromomethyl)benzonitrile)

IT Precipitation (chemical)
(precipitation method for the separation of the letrozole precursor 4-[1-(1,2,4-triazolyl)methyl]benzonitrile from its 4-[1-(1,3,4-triazolyl)methyl]benzonitrile byproduct isomer)

IT Ligroine
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; precipitation method for the separation of the letrozole precursor 4-[1-(1,2,4-triazolyl)methyl]benzonitrile from its 4-[1-(1,3,4-triazolyl)methyl]benzonitrile byproduct isomer)

IT 17201-43-3, 4-(Bromomethyl)benzonitrile
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation with 1,2,4-triazole)

IT 288-88-0, 1H-1,2,4-Triazole
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation with 4-(bromomethyl)benzonitrile)

IT 112809-28-6P
RL: BYP (Byproduct); PEP (Physical, engineering or chemical process); PYP (Physical process); REM (Removal or disposal); PREP (Preparation); PROC (Process)
(precipitation method for the separation of the letrozole precursor 4-[1-(1,2,4-triazolyl)methyl]benzonitrile from its 4-[1-(1,3,4-

triazolyl)methyl]benzonitrile byproduct isomer)

IT 112809-27-5P
RL: BYP (Byproduct); RCT (Reactant); REM (Removal or disposal); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(precipitation method for the separation of the letrozole precursor 4-[1-(1,2,4-triazolyl)methyl]benzonitrile from its 4-[1-(1,3,4-triazolyl)methyl]benzonitrile byproduct isomer)

IT 112809-25-3P
RL: IMF (Industrial manufacture); PUR (Purification or recovery); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(precipitation method for the separation of the letrozole precursor 4-[1-(1,2,4-triazolyl)methyl]benzonitrile from its 4-[1-(1,3,4-triazolyl)methyl]benzonitrile byproduct isomer)

IT 7647-01-0, Hydrogen chloride, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(precipitation method for the separation of the letrozole precursor 4-[1-(1,2,4-triazolyl)methyl]benzonitrile from its 4-[1-(1,3,4-triazolyl)methyl]benzonitrile byproduct isomer)

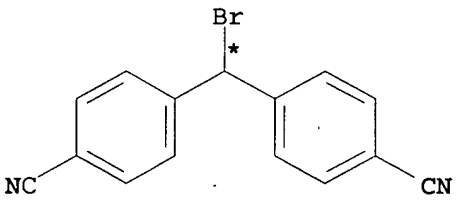
IT 1310-73-2, Sodium hydroxide, reactions
RL: RGT (Reagent); RACT (Reactant or reagent)
(precipitation method for the separation of the letrozole precursor 4-[1-(1,2,4-triazolyl)methyl]benzonitrile from its 4-[1-(1,3,4-triazolyl)methyl]benzonitrile byproduct isomer)

IT 56-23-5, Tetrachloromethane, uses 67-63-0, 2-Propanol, uses 67-66-3, Chloroform, uses 108-20-3, Diisopropyl ether 110-54-3, Hexane, uses 7732-18-5, Water, uses
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; precipitation method for the separation of the letrozole precursor 4-[1-(1,2,4-triazolyl)methyl]benzonitrile from its 4-[1-(1,3,4-triazolyl)methyl]benzonitrile byproduct isomer)

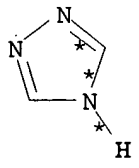
RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 4 OF 14 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 1 A + B ===> C

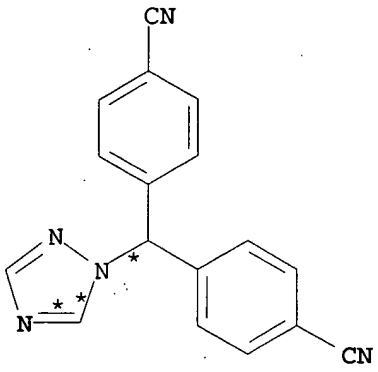


A



B

(1) →



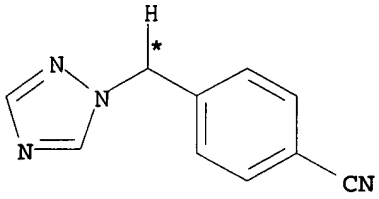
C
YIELD 63%

RX(1) RCT A 69545-39-7, B 288-88-0
RGT D 584-08-7 K2CO3
PRO C **112809-51-5**
CAT 7681-11-0 KI
SOL 67-64-1 Me2CO
CON 10 hours, 55 deg C

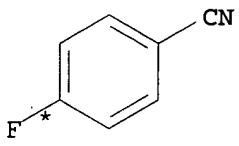
AN 141:314255 CASREACT
TI Synthesis, characterization and single crystal structure of 4,4'-(1H-1,2,4 triazol- 1-methylene)bisbenzonitrile
AU Wang, Jun; Bei, Feng-li; Li, Ren-Yu; Yang, Xu-Jie; Wang, Xin
CS Laboratory of Materials Chemistry, Nanjing University of Science and Technology, Nanjing, 210094, Peop. Rep. China
SO Youji Huaxue (2004), 24(5), 550-553
CODEN: YCHHDX; ISSN: 0253-2786
PB Kexue Chubanshe
DT Journal
LA Chinese
AB The title compound was prepared and characterized by IR, NMR spectra and single crystal anal. The crystal belongs to monoclinic system with space group P21/n, a =0.7030(14) nm, b = 1.6170(3) nm, c = 1.3360(3) nm, β = 104.80(3)° and Z = 4. In the crystal lattice, the mols. create a supermol. structure through hydrogen bonding.
CC 28-10 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 75
ST triazolylmethylenedibenzonitrile prepn crystal structure
IT Crystal structure
(synthesis, characterization and single crystal structure of 4,4'-(1H-1,2,4-triazol-yl-1-methylene)bisbenzonitrile)
IT 112809-51-5P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(synthesis, characterization and single crystal structure of 4,4'-(1H-1,2,4-triazol-yl-1-methylene)bisbenzonitrile)
IT 288-88-0, 1H-1,2,4-Triazole 69545-39-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis, characterization and single crystal structure of 4,4'-(1H-1,2,4-triazol-yl-1-methylene)bisbenzonitrile)

L66 ANSWER 5 OF 14 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 6 ...A + B ===> C

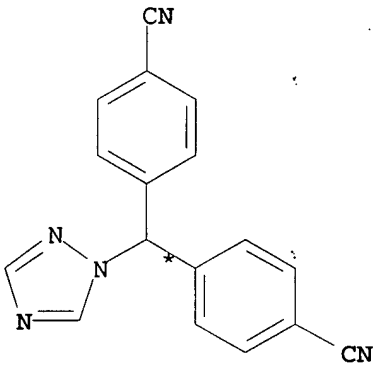


A



B

(1) →



C
YIELD 58%

RX(1) RCT A 112809-25-3

STAGE(1)
RGT D 865-47-4 t-BuOK
SOL 68-12-2 DMF
CON SUBSTAGE(2) 1 hour

STAGE(2)
RCT B 1194-02-1
SOL 68-12-2 DMF
CON SUBSTAGE(2) 3 hours

STAGE(3)
RGT E 7647-01-0 HCl
SOL 7732-18-5 Water
CON pH 7.5 - 8.0

PRO C **112809-51-5**

AN 141:225518 CASREACT

TI Improved regiospecific process for preparation of 4,4'-(1H-1,2,4-triazol-1-ylmethylene)bisbenzonitrile (Letrazole) free of isomeric impurities and 4,4',4''-methylidynetris(benzonitrile)

IN Patel, Hetalkumar Virendrabhai; Jani, Raja Jyotir; Thennati, Rajamannar

PA Sun Pharmaceutical Industries Limited, India

SO PCT Int. Appl., 15 pp.

CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2004076409	A2	20040910	WO 2004-IN36	20040205
WO 2004076409	A3	20041104		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
IN 2003MU00167	A	20050204	IN 2003-MU167	20030206
CA 2515181	A1	20040910	CA 2004-2515181	20040205
EP 1594850	A2	20051116	EP 2004-708435	20040205
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
US 2006128775	A1	20060615	US 2005-544460	20050804
PRAI IN 2003-MU167	20030206			
WO 2004-IN36	20040205			

AB The title compound (1), useful as an antineoplastic agent (no data), is prepared by treating of 4-halomethylbenzonitrile, preferably 4-bromomethylbenzonitrile, with 4-amino-1,2,4-triazole in alc. solvent, preferably isopropanol, at 20-150° for 3-8 h to give 4-amino-1-[(4-cyanophenyl)methyl]-4H-1,2,4-triazolium halide (2), which is purified by washing with appropriate organic solvent and deaminated by nitrous acid, prepared in situ from inorg. nitrite and HCl to give 4-(1H-1,2,4-triazol-1-yl)benzonitrile (3) free of its 4H-1,2,4-triazol-4-yl isomer; reaction of 3 4-fluorobenzonitrile affords 1 with purity ≥99.5% after recrystn. from Et acetate. In an example, 4-bromomethylbenzonitrile (1.53 mol) was heated with 4-amino-4H-1,2,4-triazole (1.683 mol) in 3 L of isopropanol for 5 h at 80-85°; after cooling the reaction mixture to 0-5° the product was filtered and washed with isopropanol and hexane, yielding 310 g (72.2%) of 2; aqueous solution of 0.982 mol of 2 was then deaminated by 1.963 mol of aqueous HCl and 1.080 mol of $NaNO_2$ at 0-5° for 6 h followed by reaction at 30-35° for 2-3 h; unreacted HNO_2 was decomposed with urea, impurities were extracted with dichloromethane, after addition of 25% aqueous ammonia until pH is adjusted to 8.0-8.5 the product 3 was extracted with dichloromethane, concentrated and filtered after addition of isopropanol-hexane (20:80) to give 150 g (82.9%) of 3, free of its 4-triazolyl isomer. The target compound 1 was then prepared by deprotonation of 3 with KOtBu in DMF at -10° to -5° and reaction with 4-fluorobenzonitrile; after neutralization and evaporation of the solvent the crude product was extracted by Et acetate from its aqueous solution and filtered after addition of isopropanol; purification of 1 was achieved by recrystn. from Et acetate to give 58% yield of 1 of 99.90% HPLC purity.

IC ICM C07D
CC 28-10 (Heterocyclic Compounds (More Than One Hetero Atom))
ST triazole cyanophenylmethyl deriv prepn aminotriazole alkylation deamination arylation; Letrazole triazolylmethylene dibenzonitrile improved prepn process; aminotriazole bromomethylbenzonitrile regiospecific alkylation deamination triazolylmethylene dibenzonitrile improved prepn; benzonitrile bismethylene triazolyl regiospecific prepn

arylation fluorobenzonitrile
IT Arylation
Deamination
(improved preparation of (triazolylmethylene)bis(benzonitrile) by regioselective alkylation of 4-amino-1,2,4-triazole with subsequent deamination and arylation)
IT Heterocyclic compounds
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(nitrogen, five-membered, 1,2,4-triazole; improved preparation of (triazolylmethylene)bis(benzonitrile) by regioselective alkylation of 4-amino-1,2,4-triazole with subsequent deamination and arylation)
IT Solvents
(organic; improved preparation of (triazolylmethylene)bis(benzonitrile) by regioselective alkylation of 4-amino-1,2,4-triazole with subsequent deamination and arylation)
IT Alkylation
(regioselective; improved preparation of (triazolylmethylene)bis(benzonitrile) by regioselective alkylation of 4-amino-1,2,4-triazole with subsequent deamination and arylation)
IT Alcohols, uses
Alkanes, uses
Esters, uses
Ethers, uses
Ketones, uses
Nitriles, uses
RL: NUU (Other use, unclassified); USES (Uses)
(solvents; improved preparation of (triazolylmethylene)bis(benzonitrile) by regioselective alkylation of 4-amino-1,2,4-triazole with subsequent deamination and arylation)
IT 584-13-4, 4H-1,2,4-Triazol-4-amine
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkylation; improved preparation of (triazolylmethylene)bis(benzonitrile) by regioselective alkylation of 4-amino-1,2,4-triazole with subsequent deamination and arylation)
IT 112809-25-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(arylation; improved preparation of (triazolylmethylene)bis(benzonitrile) by regioselective alkylation of 4-amino-1,2,4-triazole with subsequent deamination and arylation)
IT 748812-17-1P, 4-Amino-1-(4-cyanophenyl)-4H-1,2,4-triazolium bromide
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(deamination; improved preparation of (triazolylmethylene)bis(benzonitrile) by regioselective alkylation of 4-amino-1,2,4-triazole with subsequent deamination and arylation)
IT 1194-02-1 17201-43-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(improved preparation of (triazolylmethylene)bis(benzonitrile) by regioselective alkylation of 4-amino-1,2,4-triazole with subsequent deamination and arylation)
IT 7647-01-0, Hydrochloric acid, reactions
RL: RGT (Reagent); RACT (Reactant or reagent)
(improved preparation of (triazolylmethylene)bis(benzonitrile) by regioselective alkylation of 4-amino-1,2,4-triazole with subsequent deamination and arylation)
IT 112809-51-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(improved preparation of (triazolylmethylene)bis(benzonitrile) by

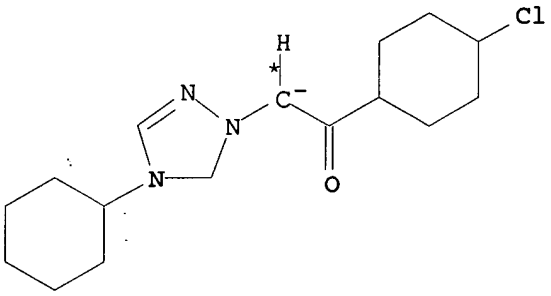
regioselective alkylation of 4-amino-1,2,4-triazole with subsequent deamination and arylation)

IT 112809-27-5 112809-52-6 113402-31-6
RL: MSC (Miscellaneous)
(impurity; improved preparation of (triazolylmethylene)bis(benzonitrile) by regioselective alkylation of 4-amino-1,2,4-triazole with subsequent deamination and arylation)

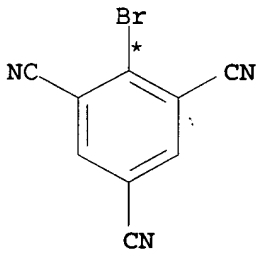
IT 67-63-0, 2-Propanol, uses 141-78-6, Ethyl acetate, uses
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; improved preparation of (triazolylmethylene)bis(benzonitrile) by regioselective alkylation of 4-amino-1,2,4-triazole with subsequent deamination and arylation)

L66 ANSWER 6 OF 14 CASREACT COPYRIGHT 2007 ACS on STN

RX(7) OF 15 ...B + G ===> J...

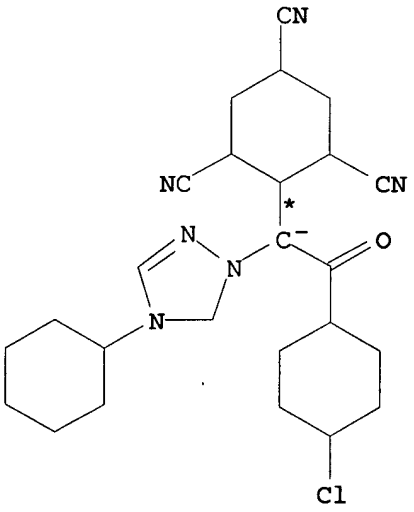


B



G

(7)



J
YIELD 58%

RX(7) RCT B 289617-03-4, G 13520-05-3

STAGE(1)
SOL 67-66-3 CHCl3
CON 0 - 5 deg C

STAGE(2)
RGT C 121-44-8 Et3N
SOL 67-66-3 CHCl3
CON SUBSTAGE(1) 10 minutes, 0 - 5 deg C
SUBSTAGE(2) 3 hours, 0 - 5 deg C

PRO J **592544-24-6**

AN 139:230684 CASREACT

TI New synthesis of triazolo[5,1-a] and [3,4-a]isoindoles by internal electrocyclisation of disubstituted triazolium ylides

AU Surpateanu, Georgiana G.; Woisel, Patrice; Vergoten, Gerard; Surpateanu, Gheorghe

CS Departamentul de Chimie Organica si Biochimie, Facultatea de Chimie, Univ. "Al. I. Cuza", Iasi, 6600, Rom.

SO Heterocyclic Communications (2003), 9(1), 45-50
CODEN: HCOMEX; ISSN: 0793-0283

PB Freund Publishing House Ltd.

DT Journal

LA English

AB This paper reports the synthesis of triazolo[5,1-a] and [3,4-a]isoindoles by an internal electrocyclization of disubstituted triazolium ylides having as structural subunit a tricyanophenyl group. The intermediate formation of a dihydrotriazoloisoindole was proved.

CC 28-10 (Heterocyclic Compounds (More Than One Hetero Atom))

ST triazolium ylide tricyanophenyl internal electrocyclization; triazoloisoindole prepn

IT Cyclization
(electrocyclic, internal; new synthesis of triazolo[5,1-a] and [3,4-a]isoindoles by internal electrocyclization of disubstituted triazolium ylides)

IT Heterocyclic compounds
RL: SPN (Synthetic preparation); PREP (Preparation)
(nitrogen; preparation of triazolo[5,1-a] and [3,4-a]isoindoles by internal electrocyclization of disubstituted triazolium ylides)

IT Ylides
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(triazolium; new synthesis of triazolo[5,1-a] and [3,4-a]isoindoles by internal electrocyclization of disubstituted triazolium ylides)

IT 13520-05-3 75647-69-7 175547-87-2 175547-88-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of triazolo[5,1-a] and [3,4-a]isoindoles by internal electrocyclization of disubstituted triazolium ylides)

IT 75647-77-7P 289617-03-4P 289617-04-5P 592544-24-6P 592544-25-7P 592544-26-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of triazolo[5,1-a] and [3,4-a]isoindoles by internal electrocyclization of disubstituted triazolium ylides)

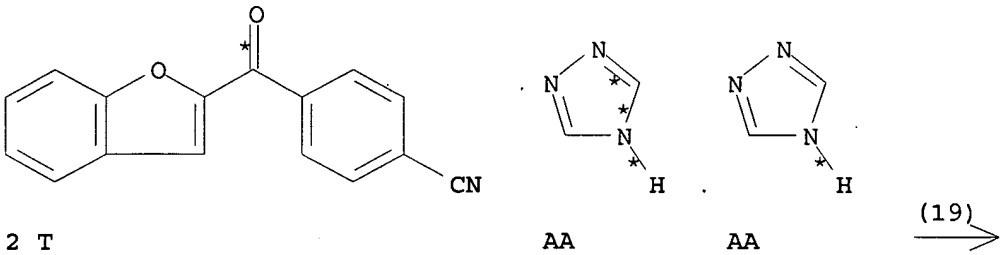
IT 592544-27-9P 592544-28-0P 592544-29-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of triazolo[5,1-a] and [3,4-a]isoindoles by internal electrocyclization of disubstituted triazolium ylides)

RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD

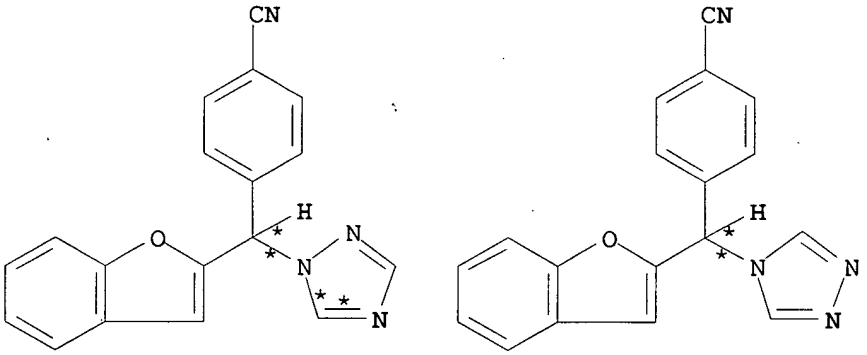
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 7 OF 14 CASREACT COPYRIGHT 2007 ACS on STN

RX(19) OF 33 ...2 T + 2 AA ===> **AN** + AO



2 T AA AA



AN
YIELD 23%

AO
YIELD 30%

RX(19) RCT T 117238-74-1

STAGE(1)
RGT AC 16940-66-2 NaBH4
SOL 123-91-1 Dioxane
CON 2 hours, room temperature

STAGE(2)
RCT AA 288-88-0
RGT AD 7719-09-7 SOCl2
SOL 75-05-8 MeCN
CON 1 hour, 10 deg C

STAGE(3)
RGT AE 584-08-7 K2CO3
SOL 75-05-8 MeCN
CON 4 - 7 days, room temperature

PRO AN **207288-29-7**, AO 207288-56-0
NTE regioselective

AN 138:313873 CASREACT
TI 1-[(Benzofuran-2-yl)phenylmethyl]triazoles as steroidogenic inhibitors: Synthesis and in vitro inhibition of human placental CYP19 aromatase
AU Vinh, T. K.; Yee, S. W.; Kirby, A. J.; Nicholls, P. J.; Simons, C.
CS Medicinal Chemistry Divisions, Welsh School of Pharmacy, Cardiff University, Cardiff, CF10 3XF, UK
SO Anti-Cancer Drug Design (2001), 16(4/5), 217-225
CODEN: ACDDEA; ISSN: 0266-9536
PB Oxford University Press
DT Journal
LA English
AB Hormone-dependent breast cancer is stimulated by the female hormones oestrone and estradiol, therefore compds. which inhibit the specific enzymes involved in the formation of the mitogenic hormones, namely CYP19 aromatase (P 450AROM) and 17β-hydroxysteroid dehydrogenase (17β-HSD) type 1, are targets of therapeutic interest for the treatment of breast cancer. A series of novel 1-[(benzofuran-2-yl)phenylmethyl]1,2,4-triazoles were prepared using a three-step synthesis and evaluated for their inhibitory activity against human placental aromatase in vitro, using [1,2,6,7-3H]androstenedione as the substrate for the aromatase enzyme. Inhibitory activity was dependent on both substituent and position of substitution, with introduction of small electron-withdrawing groups in the Ph ring showing optimum activity (IC50 ranging from 0.065 to 2.02 μM). Substitution in the benzofuran ring resulted in a loss of activity when substituted at C-5 (IC50 > 20 μM). The compds. were all shown to exhibit weak inhibitory activity against rat testes P 450 17 (17,20-lyase), indicating good selectivity towards P 450AROM.
CC 1-3 (Pharmacology)
Section cross-reference(s): 7
ST benzofuranylphenylmethyltriazole prepn placenta CYP19 aromatase inhibition; structure activity benzofuranylphenylmethyltriazole placenta CYP19 aromatase
IT Enzyme functional sites
(active; preparation and structure-activity relations of [(benzofuranyl)phenylmethyl]triazoles as steroidogenic inhibitors and inhibition of human placental CYP19 aromatase)
IT Human
(preparation and structure-activity relations of [(benzofuranyl)phenylmethyl]triazoles as steroidogenic inhibitors and inhibition of human placental CYP19 aromatase)
IT 9039-48-9, Aromatase 440367-91-9, Cytochrome CYP19
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(preparation and structure-activity relations of [(benzofuranyl)phenylmethyl]triazoles as steroidogenic inhibitors and inhibition of human placental CYP19 aromatase)
IT 207288-25-3P 207288-26-4P 207288-27-5P 207288-28-6P 207288-29-7P 207288-31-1P 207288-56-0P 245037-71-2P 245037-72-3P 512171-89-0P 512171-90-3P 512171-91-4P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation and structure-activity relations of [(benzofuranyl)phenylmethyl]triazoles as steroidogenic inhibitors and inhibition of human placental CYP19 aromatase)
IT 70-11-1 90-02-8, reactions 97-51-8 99-73-0 288-88-0, 1H-1,2,4-Triazole 383-53-9 403-29-2 536-38-9 619-41-0 2631-72-3 20099-89-2 31827-94-8 102429-07-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation and structure-activity relations of

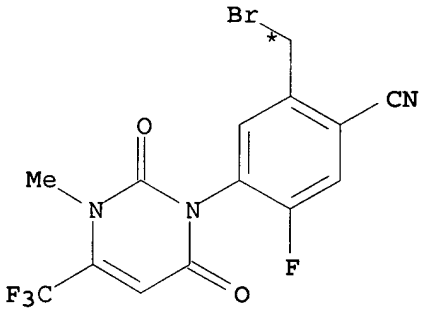
[(benzofuranyl)phenylmethyl]triazoles as steroidogenic inhibitors and inhibition of human placental CYP19 aromatase)

IT 6272-40-8P 27044-77-5P 27052-20-6P 27124-03-4P 29555-25-7P 41967-43-5P 101315-49-5P 117238-74-1P 117238-75-2P 512171-87-8P 512171-88-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and structure-activity relations of [(benzofuranyl)phenylmethyl]triazoles as steroidogenic inhibitors and inhibition of human placental CYP19 aromatase)

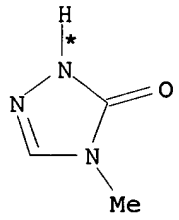
RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 8 OF 14 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 28 ...A + B ===> C

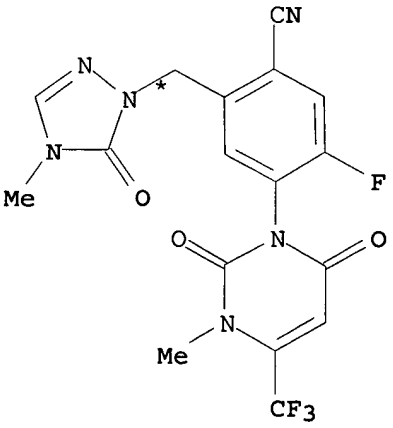


A



B

(1) →



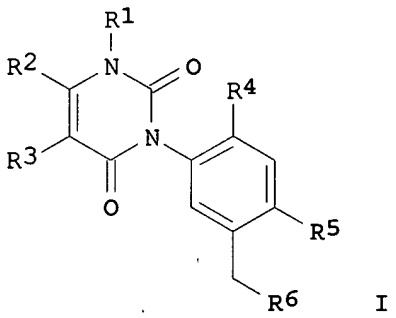
C
YIELD 46%

RX(1) RCT A 418762-20-6, B 4114-43-6
RGT D 584-08-7 K2CO3
PRO C **418762-00-2**
SOL 75-05-8 MeCN

AN 136:340693 CASREACT
TI Preparation of [(oxotriazolomethyl)phenyl]uracils and analogs as herbicides
IN Andree, Roland; Schwarz, Hans-Georg; Schneider, Udo; Wischnat, Ralf; Drewes, Mark Wilhelm; Dahmen, Peter; Feucht, Dieter; Pontzen, Rolf
PA Bayer Aktiengesellschaft, Germany
SO PCT Int. Appl., 90 pp.
CODEN: PIXXD2
DT Patent
LA German
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2002034725	A1	20020502	WO 2001-EP11589	20011008
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10051981	A1	20020502	DE 2000-10051981	20001020
IN 2001MU00971	A	20050304	IN 2001-MU971	20011005
CA 2425884	A1	20020502	CA 2001-2425884	20011008
AU 200223604	A	20020506	AU 2002-23604	20011008
EP 1330443	A1	20030730	EP 2001-988711	20011008
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
BR 2001014746	A	20040210	BR 2001-14746	20011008
JP 2004531462	T	20041014	JP 2002-537716	20011008
US 6992044	B1	20060131	US 2003-399359	20030818
PRAI DE 2000-10051981	20001020			
WO 2001-EP11589	20011008			

OS MARPAT 136:340693
GI



I

AB Title compds. [I; R1 = H, NH2, alk(en)yl, etc.; R2 = cyano, CO2H, CONH2, etc.; R3 = H, halo, (un)substituted alkyl; R4 = H, halo, NO2, cyano, alkoxy; R5 = halo, cyano, CSNH2, alkyl, alkoxy, etc.; R6 = (un)substituted N-attached heterocyclyl] were prepared as herbicides (no data). Thus, RNHCO2Et (R = 4-bromo-2-fluoro-5-methylphenyl) was cyclocondensed with

F3CC(NH2):CHCO2Et and the product converted in 2 steps to I (R1 = Me, R2 = CF3, R3 = H, R4 = F, R5 = cyano)(II; R6 = Br) which was aminated by 4-methyl-2,4-dihydro-3H-1,2,4-triazol-3-one to give II (R6 = 4-methyl-5-oxo-4,5-dihydro-1H-1,2,4-triazol-1-yl).

IC ICM C07D239-54
ICS C07D403-10; C07D403-12; C07C211-52; C07C331-08; C07D487-04; A01N043-54

CC 28-16 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 5

ST oxotriazolomethylphenyluracil prepn herbicide

IT Herbicides
([(oxotriazolomethyl)phenyl]uracils and analogs)

IT 418762-00-2P 418762-01-3P 418762-02-4P 418762-03-5P 418762-04-6P
418762-05-7P 418762-06-8P 418762-07-9P 418762-08-0P 418762-09-1P
418762-10-4P 418762-11-5P 418762-12-6P 418762-13-7P 418762-14-8P
418762-15-9P 418762-16-0P 418762-17-1P 418762-18-2P 418762-19-3P
418762-27-3P
RL: AGR (Agricultural use); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of [(oxotriazolomethyl)phenyl]uracils and analogs as herbicides)

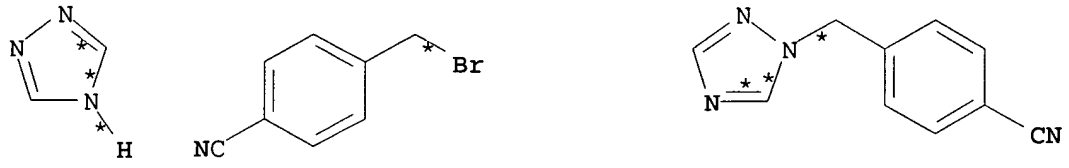
IT 372-29-2, 3-Amino-4,4,4-trifluorocrotonic acid ethyl ester 452-84-6, 2-Fluoro-5-methylaniline 4114-43-6, 4-Methyl-2,4-dihydro-3H-1,2,4-triazol-3-one
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of [(oxotriazolomethyl)phenyl]uracils and analogs as herbicides)

IT 418762-20-6P 418762-21-7P 418762-22-8P 418762-23-9P 418762-24-0P
418762-25-1P 418762-26-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of [(oxotriazolomethyl)phenyl]uracils and analogs as herbicides)

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 9 OF 14 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 39 A + B ===> C...



A B C
YIELD 57%

RX(1) RCT A 288-88-0, B 17201-43-3

STAGE(1)
SOL 67-66-3 CHCl3, 75-05-8 MeCN

STAGE(2)

RGT D 144-55-8 NaHCO3
SOL 7732-18-5 Water

PRO C **112809-25-3**

AN 136:167328 CASREACT

TI Synthesis and antimicrobial activity of 2,4-disubstituted thiazole derivatives containing a 1,2,4-triazole ring system

AU John, Jaya; Bobade, A. S.; Khadse, Barsu G.

CS Haffkine Institute for Training, Research and Testing, Mumbai, 400 012, India

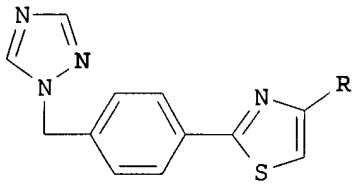
SO Indian Journal of Heterocyclic Chemistry (2001), 10(4), 295-298
CODEN: IJCHEI; ISSN: 0971-1627

PB Prof. R. S. Varma

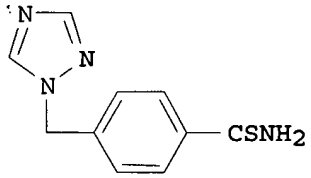
DT Journal

LA English

GI



I



II

AB Title compds. I (R = substituted Ph, 5-chlorothienyl) were prepared by condensation of benzthioamide II with various substituted aryl/heteroaryl α-halo ketones. I were tested for antibacterial activity.

CC 28-10 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1

ST triazole arylthiazolylbenzyl prepn antibacterial activity; thiazole aryl triazolylmethylphenyl prepn antibacterial activity

IT Antibacterial agents
(2,4-disubstituted thiazole derivs. containing a 1,2,4-triazole ring system)

IT Heterocyclization
(preparation and antibacterial activity of 2,4-disubstituted thiazole derivs. containing a 1,2,4-triazole ring system)

IT 396068-99-8P 396069-00-4P 396069-01-5P 396069-02-6P 396069-03-7P 396069-04-8P 396069-05-9P 396069-06-0P 396069-07-1P 396069-08-2P 396069-09-3P 396069-10-6P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation and antibacterial activity of 2,4-disubstituted thiazole derivs. containing a 1,2,4-triazole ring system)

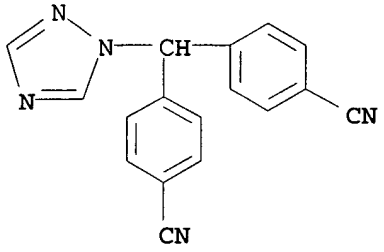
IT 288-88-0, 1H-1,2,4-Triazole 403-29-2 536-38-9 655-15-2, 2-Bromo-2'-fluoroacetophenone 2003-10-3 2631-72-3 2632-10-2 17201-43-3 41011-01-2 53631-18-8 57731-17-6 60965-24-4 343787-47-3 357915-19-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation and antibacterial activity of 2,4-disubstituted thiazole derivs. containing a 1,2,4-triazole ring system)

IT 112809-25-3P 396068-98-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and antibacterial activity of 2,4-disubstituted thiazole derivs. containing a 1,2,4-triazole ring system)

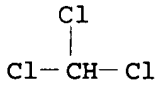
RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 10 OF 14 CASREACT COPYRIGHT 2007 ACS on STN

RX(1) OF 1 A + B ===> C

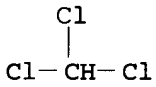


A

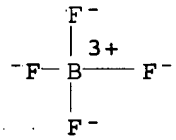


B

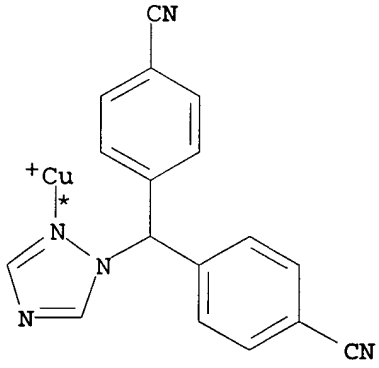
(1) ⟶



C: CM 1
YIELD 40%



C: CM 2
YIELD 40%



C: CM 3
YIELD 40%

RX(1) RCT A 112809-51-5, B 67-66-3
RGT D 15418-29-8 (MeCN)4Cu(I) BF4
PRO C **364594-74-1**
SOL 67-66-3 CHCl3, 71-43-2 Benzene
NTE solvothermal

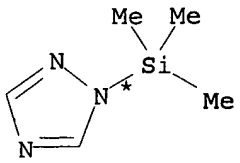
AN 135:297557 CASREACT

TI A Cu(I) coordination polymer employing a nonsteroidal aromatase inhibitor

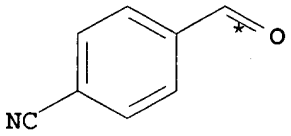
letrozole as a building block
AU Yuan, Rong-Xin; Xiong, Ren-Gen; Abrahams, Brendan F.; Lee, Gene-Hsiang; Peng, Shie-Ming; Che, Chi-Ming; You, Xiao-Zeng
CS The State Key Laboratory of Coordination Chemistry, Coordination Chemistry Institute, Nanjing University, Nanjing, 210093, Peop. Rep. China
SO Journal of the Chemical Society, Dalton Transactions (2001), (14), 2071-2073
CODEN: JCSDAA; ISSN: 1472-7773
PB Royal Society of Chemistry
DT Journal
LA English
AB The solvothermal reaction of [CuI(MeCN)4](BF4) with letrozole (1-[bis(4-cyanophenyl)methyl]-1,2,4-triazole, LTZ) affords a quite unusual 3-dimensional coordination polymer, {[CuI(LTZ)](BF4)·CHCl3}n (1), in which for the first time LTZ demonstrates its coordinating ability as a tetradentate ligand. Crystal data for 1: orthorhombic, Pbca, a 8.9646(3), b 22.8924(9), c 23.9497(9), Z = 8, R1 = 0.0822, wR2 = 0.2535. The CHCl3 in compound 1 can be thermally removed, and the desolvated derivative can then include CHCl3 back into the host cavity.
CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
ST crystal structure copper letrozole coordination polymer; copper letrozole coordination polymer prepn inclusion chloroform
IT Inclusion reaction
(of chloroform in copper(I) letrozole coordination polymer)
IT Crystal structure
Molecular structure
(of copper(I) letrozole coordination polymer)
IT 364594-74-1P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(coordination polymer; preparation, crystal structure, and thermal desolvation of)
IT 15418-29-8, Tetrakis(acetonitrile)copper(1+) tetrafluoroborate
112809-51-5, Letrozole
RL: RCT (Reactant); RACT (Reactant or reagent)
(for solvothermal preparation of copper(I) letrozole coordination polymer)
IT 364594-73-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and inclusion of chloroform)
RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 11 OF 14 CASREACT COPYRIGHT 2007 ACS on STN

RX(8) OF 12 2 A + R ===> **S**

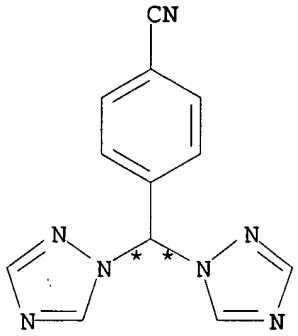


2 A



R

(8) →



S
YIELD 79%

RX(8) RCT A 18293-54-4

STAGE(1)
RGT D 7719-09-7 SOCl2

STAGE(2)
RCT R 105-07-7
SOL 108-88-3 PhMe

PRO S **305861-48-7**
NTE intermediate could be isolated

AN 134:17438 CASREACT
TI Synthesis of 1,1-bis(1,2,4-triazol-1-yl)-based potential aromatase inhibitors
AU Katritzky, Alan R.; Pastor, Alfredo; Voronkov, Michael V.
CS Department of Chemistry, Center for Heterocyclic Compounds, University of Florida, Gainesville, FL, 32611-7200, USA
SO Journal of Heterocyclic Chemistry (2000), 37(4), 743-745
CODEN: JHTCAD; ISSN: 0022-152X
PB HeteroCorporation
DT Journal
LA English
AB Reactions of 1,1'-sulfinylbis[1H-1,2,4-triazole] with carbonyl compds. led to the formation of twelve corresponding alkylidenebis[triazole] derivs., having structures resembling closely some previously prepared aromatase inhibitors. For example, the reaction of propanal with 1,1'-sulfinylbis[1H-1,2,4-triazole] gave 1,1'-propylidenebis[1H-1,2,4-triazole]. The pharmacol. activity of the compds. thus prepared was not reported.
CC 28-10 (Heterocyclic Compounds (More Than One Hetero Atom))
ST triazole prepn aromatase inhibitor; alkylidene bistriazole prepn
IT Aldehydes, reactions
Carbonyl compounds (organic), reactions
Ketones, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of alkylidenebis[triazole] derivs. from sulfinylbis[triazole] and carbonyl compds.)
IT 305861-52-3P 309978-05-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
IT 78-84-2, 2-Methylpropanal 98-53-3, 4-tert-Butylcyclohexanone 100-10-7,

4-(Dimethylamino)benzaldehyde 100-52-7, Benzaldehyde, reactions 104-87-0, 4-Methylbenzaldehyde 104-88-1, 4-Chlorobenzaldehyde, reactions 105-07-7, 4-Cyanobenzaldehyde 123-38-6, Propanal, reactions 123-72-8, Butanal 486-25-9, 9-Fluorenone 555-16-8, 4-Nitrobenzaldehyde, reactions 18293-54-4, 1-(Trimethylsilyl)-1,2,4-triazole 188829-73-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of alkylidenebis[triazole] derivs. from sulfinylbis[triazole] and carbonyl compds.)

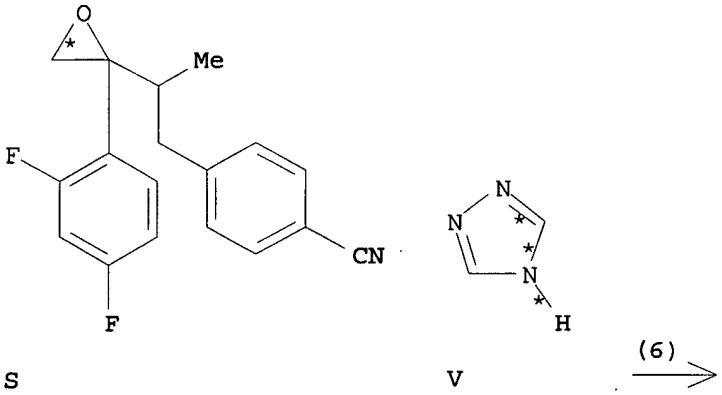
IT 82969-91-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of alkylidenebis[triazole] derivs. from sulfinylbis[triazole] and carbonyl compds.)

IT 305851-35-8P 305851-36-9P 305861-42-1P 305861-43-2P 305861-44-3P 305861-45-4P 305861-46-5P 305861-47-6P 305861-48-7P 305861-51-2P 305861-53-4P 309978-04-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of alkylidenebis[triazole] derivs. from sulfinylbis[triazole] and carbonyl compds.)

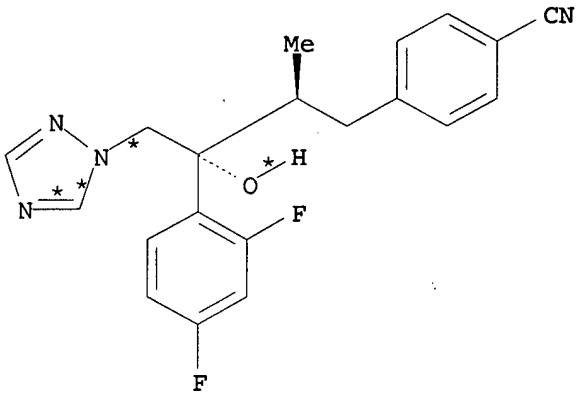
RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 12 OF 14 CASREACT COPYRIGHT 2007 ACS on STN

RX(6) OF 9 ...S + V ===> W



S V (6) →



W
YIELD 52%

RX(6) RCT S 187159-10-0, V 288-88-0

STAGE(1)
RGT X 865-47-4 t-BuOK
SOL 68-12-2 DMF

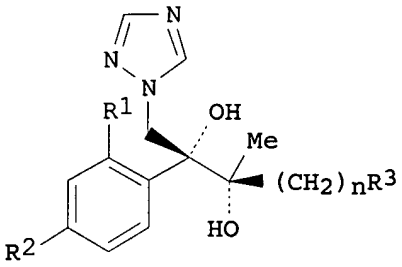
STAGE(2)
RGT H 7732-18-5 Water

PRO W **187159-09-7**
NTE stereoselective

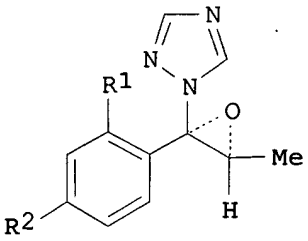
AN 126:171601 CASREACT
TI Preparation of optically active triazole derivatives as antifungal agents
IN Kodama, Hiroki; Umimoto, Koji; Kawaguchi, Michihiko; Shimosako, Masahiro; Yoshida, Masanori
PA Nihon Nohyaku Co., Ltd., Japan
SO Eur. Pat. Appl., 13 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 753513	A2	19970115	EP 1996-110980	19960708
	EP 753513	A3	19970122		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, PT, SE				
	CA 2180091	A1	19970109	CA 1996-2180091	19960627
	AU 9658378	A	19970123	AU 1996-58378	19960705
	AU 711157	B2	19991007		
	JP 09077750	A	19970325	JP 1996-197066	19960708
	CN 1149052	A	19970507	CN 1996-111722	19960708
PRAI	JP 1995-196173	19950708			

OS MARPAT 126:171601
GI



I



II

AB Title triazoles I (R1, R2 = H, halo or C1-C6 haloalkyl; R3 = Ph or a Ph group substituted by halo, C1-C6 haloalkyl, C1-C6 haloalkoxy, or CN, or silyl substituted by C1-C6 alkyl, Ph, or halophenyl; n = 1, 2; R1, R2 are not H at the same time) or their pharmaceutically acceptable salts were shown to have antifungal activity greater than ketoconazole. I were prepared by treating epoxides II with R3(CH2)nMgX in the presence of copper salts.

IC ICM C07D249-08
ICS C07F007-10; A61K031-41

CC 28-10 (Heterocyclic Compounds (More Than One Hetero Atom))

ST triazolylalkanediol prepn antifungal; asym alkylation epoxide Grignard

IT Fungicides
(preparation of optically-active triazolylalkanediols as antifungals)

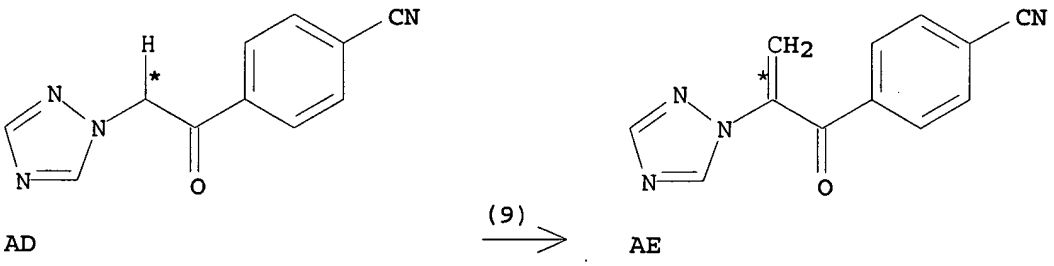
IT 187159-03-1P 187159-04-2P 187159-05-3P 187159-06-4P 187159-07-5P 187159-08-6P 187159-09-7P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of optically-active triazolylalkanediols as antifungals)

IT 288-88-0, 1H-1,2,4-Triazole 352-11-4, 4-Fluorobenzyl chloride 2344-80-1, (Chloromethyl)trimethylsilane 17201-43-3, 4-Cyanobenzyl bromide 23915-07-3 85068-30-0 127000-90-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of optically-active triazolylalkanediols as antifungals)

IT 173190-46-0P 187159-10-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of optically-active triazolylalkanediols as antifungals)

L66 ANSWER 13 OF 14 CASREACT COPYRIGHT 2007 ACS on STN

RX(9) OF 97 AD ===> **AE**



AD AE

RX(9) RCT AD 103962-24-9

RGT T 51-80-9 Me2NCH2NMe2, U 108-24-7 Ac2O
PRO AE **104940-93-4**
NTE 2% Overall

AN 107:176001 CASREACT
TI Synthesis and antifungal activity of a series of novel 1,2-disubstituted propenones
AU Ogata, Masaru; Matsumoto, Hiroshi; Kida, Shiro; Shimizu, Sumio; Tawara, Katsuya; Kawamura, Yoshimi
CS Shionogi Res. Lab., Shionogi and Co., Ltd., Osaka, 553, Japan
SO Journal of Medicinal Chemistry (1987), 30(8), 1497-502
CODEN: JMCMAR; ISSN: 0022-2623
DT Journal
LA English
AB RCOCR1:CH2 [I; R = 4-ClC6H4, 4-FC6H4, Me, Ph, 2-furyl, 2-thienyl, etc.; R1 = 1-(1,2,4-triazolyl), 1-(2-oxo-1,2-dihydropyridyl), etc.] and R2COC(:CH2)CH2R3 [II; R2 = 4-MeOC6H4, 3-thienyl, 4-ClC6H4NH, etc.; R3 = 1-(1,2,4-triazolyl), 1-(2-oxo-1,2-dihydropyridyl), etc.] were prepared and tested for antifungal activity. Thus, 4-MeOC6H4COCH2Br was added to a THF solution containing 1,2,4-triazole and NaH to give 4-MeOC6H4COCH2R1 [R1 = 1-(1,2,4-trizolyl)], which was treated with (Me2N)2CH2 and Ac2O to give 44% I [R = 4-MeOC6H4, R1 = 1-(1,2,4-trizolyl)]. Comparison of the structure-activity relationships showed that the conjugated structure of carbonyl and exo methylene groups in I and II play an important role in potent antifungal activity. However, it is noteworthy that 4-R4C6H4COCHR5CH2OR6 [R4 = MeO, R5 = 1-(1,2,4-trizolyl), R6 = H; R4 = MeO, R5 = 1-(1,2,4-triazolyl), R6 = Me; R4 = Cl, R5 = 3-(4-oxo-3,4-dihydroquinazolinyl), R6 = H)], which have a hydroxymethyl or methoxymethyl group instead of an exo methylene group in I, also showed potent activity. Although many compds. exhibited strong antifungal activity in vitro, none were effective orally against subacute systemic candidiasis in mice.
CC 28-19 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1, 10
ST antifungal activity phenylpropenone prepn; heterocyclic phenylpropenone prepn antimycotic activity; mol structure antifungal activity
IT Fungicides and Fungistats
(heterocyclic phenylpropenones)
IT Molecular structure-biological activity relationship
(fungicidal, of heterocyclic phenylpropenones)
IT 103-80-0, Phenylacetyl chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(Frediels-Crafts acylation by, of thiophene)
IT 110-02-1, Thiophene
RL: RCT (Reactant); RACT (Reactant or reagent)
(Friedels-Crafts acylation of, with phenylacetyl chloride)
IT 92-91-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(Mannich reaction of, with dimethylamine and formaldehyde)
IT 33994-12-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkylation by, of hydroxyquinoline)
IT 288-13-1, Pyrazole
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkylation of, with (dimethylamino)phenylpropiophenone)
IT 59-31-4, 2-Hydroxyquinoline
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkylation of, with bromo(chlorophenyl)propiophenone)
IT 288-88-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkylation of, with bromomethoxyacetophenone)

IT 106-47-8, 4-Chloroaniline, reactions 110-91-8, Morpholine, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(amidation of, with (dichlorophenyl)acrylic acid chloride)
IT 100-06-1, p-Methoxyacetophenone 6285-05-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(bromination of)
IT 123-38-6, Propionaldehyde, reactions 459-57-4, 4-Fluorobenzaldehyde
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation of, with (oxodihydropyridyl)chloroacetophenone)
IT 90059-70-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation of, with formaldehyde)
IT 51-80-9, N,N,N',N'-Tetramethyldiaminomethane
RL: RCT (Reactant); RACT (Reactant or reagent)
(methylenation by, of heterocyclic and Ph Me ketones)
IT 6306-60-1, 2,4-Dichlorophenylacetonitrile
RL: RCT (Reactant); RACT (Reactant or reagent)
(methylenation of, with tetramethylaminomethane and acetic anhydride)
IT 952-75-0 2138-38-7 3194-15-8 13576-81-3 58905-19-4 58905-20-7
58905-21-8 58905-32-1 64882-52-6 67947-51-7 81234-31-3
81234-79-9 89082-08-6 90059-68-0 90059-70-4 98617-95-9
103962-24-9 107680-34-2 108664-57-9 108664-58-0 108664-59-1
108664-60-4 108664-61-5 108664-62-6 108664-63-7 108664-64-8
108664-65-9 108664-66-0 108664-67-1 108664-68-2 108664-69-3
108664-70-6 108664-71-7 108664-72-8 108664-73-9 108664-74-0
108664-75-1 108664-77-3 108664-78-4 108664-79-5 108664-80-8
108664-81-9 108664-82-0 108664-83-1 108674-95-9 108674-96-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(methylenation of, with tetramethyldiaminomethane and acetic anhydride)
IT 877-37-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and alkylation by, of hydroxypyridine)
IT 5409-63-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and alkylation by, of pyrazole)
IT 2632-13-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and alkylation by, of triazole)
IT 108664-85-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and amidation of, with chloroaniline and morpholine)
IT 13191-28-1P 24229-73-0P 98617-94-8P 104940-86-5P 104940-87-6P
104940-88-7P 104940-89-8P 104940-90-1P 104940-91-2P 104940-93-4P
104940-94-5P 104940-95-6P 104940-96-7P 104940-97-8P 104940-98-9P
104940-99-0P 104941-01-7P 104941-02-8P 104941-03-9P 104941-04-0P
104941-05-1P 104941-07-3P 104941-08-4P 104941-10-8P 104941-12-0P
104941-13-1P 108664-23-9P 108664-24-0P 108664-25-1P 108664-26-2P
108664-27-3P 108664-28-4P 108664-29-5P 108664-30-8P 108664-31-9P
108664-32-0P 108664-33-1P 108664-34-2P 108664-35-3P 108664-36-4P
108664-37-5P 108664-38-6P 108664-39-7P 108664-41-1P 108664-42-2P
108664-43-3P 108664-44-4P 108664-46-6P 108664-47-7P 108664-48-8P
108664-49-9P 108664-50-2P 108664-51-3P 108664-52-4P 108664-53-5P
108664-54-6P 108664-56-8P 111873-03-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and antimycotic activity of)
IT 108664-84-2P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and conversion of, to acid chloride)

IT 26923-38-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and hydrolysis of)

IT 13196-28-6P 89082-07-5P 108664-76-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and methylenation of, with tetramethyldiaminomethane and acetic anhydride)

IT 108664-55-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation, methlenation, and condensation of, with propionaldehyde)

IT 142-08-5, 2-Hydroxypyridine
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with chlorophenacyl bromide)

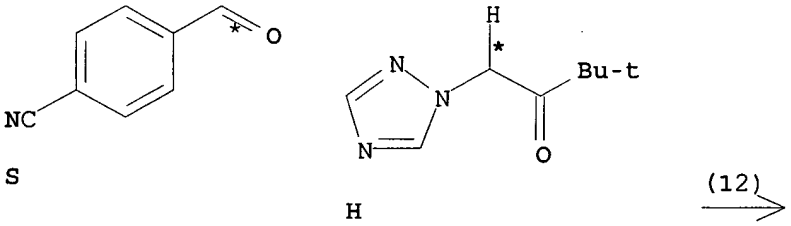
IT 536-38-9, 4'-Chlorophenacyl bromide
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with hydroxypyridine)

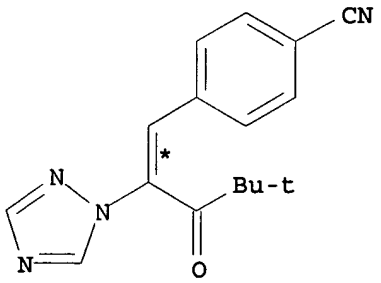
IT 5713-61-1, 2-Thienylmagnesium bromide
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with phenylpropionitrile)

IT 645-59-0, Phenylpropionitrile
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with thienylmagnesium bromide)

L66 ANSWER 14 OF 14 CASREACT COPYRIGHT 2007 ACS on STN

RX(12) OF 115 S + H ===> **T**





T

RX(12) RCT S 105-07-7, H 58905-32-1

PRO T **69752-87-0**

AN 94:103386 CASREACT

TI Geometric isomers of triazole compounds and fungicidal, herbicidal and plant growth regulating compositions containing them

IN Funaki, Yuji; Oshita, Hirofumi; Yamamoto, Shigeo; Tanaka, Shizuya; Kato, Toshiro

PA Sumitomo Chemical Co., Ltd., Japan

SO Ger. Offen., 139 pp.
CODEN: GWXXBX

DT Patent

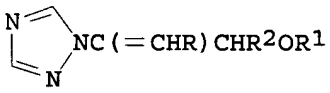
LA German

FAN.CNT 1

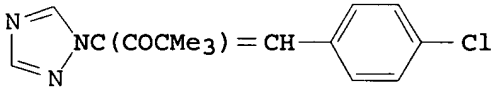
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3010560	A1	19801002	DE 1980-3010560	19800319
	DE 3010560	C2	19900920		
	JP 55124771	A	19800926	JP 1979-32876	19790320
	JP 62028789	B	19870623		
	JP 55147265	A	19801117	JP 1979-41659	19790405
	JP 01015508	B	19890317		
	JP 56025105	A	19810310	JP 1979-100547	19790806
	JP 62032163	B	19870713		
	JP 56040671	A	19810416	JP 1979-116576	19790910
	JP 01015509	B	19890317		
	JP 56045462	A	19810425	JP 1979-122366	19790921
	JP 56046869	A	19810428	JP 1979-123485	19790925
	JP 02011588	B	19900314		
	JP 56046870	A	19810428	JP 1979-124571	19790926
	JP 02011589	B	19900314		
	JP 56108773	A	19810828	JP 1980-10568	19800130
	US 4554007	A	19851119	US 1980-130108	19800313
	BR 8001617	A	19801118	BR 1980-1617	19800318
	ES 489674	A1	19810316	ES 1980-489674	19800318
	CA 1154449	A1	19830927	CA 1980-347897	19800318
	RU 2039049	C1	19950709	RU 1980-2895951	19800318
	DK 8001185	A	19800921	DK 1980-1185	19800319
	DK 157811	B	19900219		
	DK 157811	C	19900813		
	AU 8056571	A	19800925	AU 1980-56571	19800319
	AU 536825	B2	19840524		
	GB 2046260	A	19801112	GB 1980-9190	19800319
	FR 2460939	A1	19810130	FR 1980-6155	19800319
	FR 2460939	B1	19850628		
	ZA 8001597	A	19810325	ZA 1980-1597	19800319
	PL 123010	B1	19820930	PL 1980-222822	19800319
	HU 26090	A2	19830928	HU 1980-652	19800319
	HU 186281	B	19850729		
	IL 59671	A	19840229	IL 1980-59671	19800319
	RO 84686	A1	19840717	RO 1980-100530	19800319
	CH 644851	A5	19840831	CH 1980-2170	19800319
	CS 241472	B2	19860313	CS 1980-1903	19800319
	BE 882335	A1	19800716	BE 1980-199873	19800320
	NL 8001658	A	19800923	NL 1980-1658	19800320
	NL 192791	B	19971001		
	NL 192791	C	19980203		
	FR 2457858	A1	19801226	FR 1980-15965	19800718
	FR 2457858	B1	19830318		
	FR 2457859	A1	19801226	FR 1980-15966	19800718
	FR 2457859	B1	19840427		
	US 4749716	A	19880607	US 1985-772429	19850904

	RU 2043026	C1	19950910	RU 1991-4895674	19910624
	LV 10023	B	19950220	LV 1992-391	19921222
PRAI	JP 1979-32876	19790320			
	JP 1979-41659	19790405			
	JP 1979-100547	19790806			
	JP 1979-116576	19790910			
	JP 1979-122366	19790921			
	JP 1979-123485	19790925			
	JP 1979-124571	19790926			
	JP 1980-10568	19800130			
	US 1980-130108	19800313			
OS	MARPAT 94:103386				

GI



I



II

AB Triazolylpropenols I [R = (un)substituted Ph; R1 = H, alkyl, alkenyl, propynyl; R2 = alkyl, cyclopropyl, 1-methylcyclopropyl] were prepared and the isomers separated Thus α-(1,2,4-triazol-1-yl)pinacolone was treated with 4-ClC6H4CHO to give II which was chromatographed on SiO2 to sep. the isomers. The sep. isomers were reduced by NaBH4 to give isomeric I (R = 4-ClC6H4, R1 = H, R2 = CMe3) one of which was 100% fungicidal against various organisms at 5 ppm, whereas the other was <40% active.

IC C07D249-08; A01N043-64

CC 28-11 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 5

ST triazolylpropenol prepn fungicide herbicide; plant growth inhibitor triazolylpropenol; propenol triazolyl isomer

IT Fungicides and Fungistats
Herbicides
(triazolylpropenol isomers)

IT Plant hormones and regulators
RL: RCT (Reactant); RACT (Reactant or reagent)
(growth inhibitors, triazolylpropenol isomers)

IT 591-78-6 1567-75-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(bromination of)

IT 76714-47-1P 76715-75-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and deacetylation of)

IT 76713-92-3P 76713-93-4P 76713-94-5P 76713-95-6P 76713-96-7P
76713-97-8P 76713-98-9P 76713-99-0P 76714-00-6P 76714-01-7P
76714-02-8P 76714-03-9P 76714-04-0P 76714-05-1P 76714-06-2P
76714-07-3P 76714-08-4P 76714-09-5P 76714-10-8P 76714-11-9P
76714-12-0P 76714-13-1P 76714-14-2P 76714-15-3P 76714-16-4P
76714-17-5P 76714-18-6P 76714-19-7P 76714-20-0P 76714-21-1P
76714-22-2P 76714-23-3P 76714-24-4P 76714-25-5P 76714-26-6P

76714-27-7P 76714-28-8P 76714-29-9P 76714-30-2P 76714-31-3P
76714-32-4P 76714-33-5P 76714-34-6P 76714-35-7P 76714-36-8P
76714-37-9P 76714-38-0P 76714-39-1P 76714-40-4P 76714-41-5P
76714-42-6P 76714-43-7P 76714-85-7P 76714-87-9P 76714-89-1P
76714-90-4P 76714-92-6P 76714-93-7P 76714-94-8P 76714-95-9P
76714-96-0P 76714-97-1P 76714-98-2P 76714-99-3P 76715-00-9P
76715-01-0P 76715-02-1P 76715-03-2P 76715-04-3P 76715-05-4P
76715-06-5P 76715-08-7P 76715-09-8P 76715-10-1P 76715-11-2P
76715-12-3P 76715-13-4P 76715-14-5P 76715-15-6P 76715-16-7P
76715-17-8P 76715-18-9P 76715-19-0P 76715-20-3P 76715-21-4P
76715-22-5P 76715-23-6P 76715-24-7P 76715-25-8P 76715-26-9P
76715-27-0P 76715-28-1P 76715-29-2P 76715-30-5P 76715-31-6P
76715-32-7P 76715-33-8P 76715-34-9P 76715-36-1P 76715-37-2P
76715-38-3P 76715-74-7P 76725-36-5P 76725-37-6P 83657-24-3P
146098-76-2P 146098-79-5P 146144-69-6P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation and fungicidal activity of)

IT 76714-44-8P 76714-46-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with chlorobenzaldehyde)

IT 26818-07-5P 76714-45-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with triazole)

IT 76715-73-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT 76713-90-1P 83657-22-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation, methylation, and fungicidal activity of)

IT 76713-89-8P 76713-91-2P 76714-48-2P 76714-49-3P 76714-50-6P
76714-51-7P 76714-52-8P 76714-53-9P 76714-54-0P 76714-55-1P
76714-56-2P 76714-57-3P 76714-58-4P 76714-59-5P 76714-60-8P
76714-61-9P 76714-62-0P 76714-63-1P 76714-64-2P 76714-65-3P
76714-66-4P 76714-67-5P 76714-68-6P 76714-69-7P 76714-70-0P
76714-71-1P 76714-72-2P 76714-73-3P 76714-74-4P 76714-75-5P
76714-76-6P 76714-77-7P 76714-78-8P 76714-79-9P 76714-80-2P
76714-81-3P 76714-82-4P 76714-84-6P 76714-86-8P 76715-39-4P
76715-40-7P 76715-41-8P 76715-42-9P 76715-43-0P 76715-44-1P
76715-45-2P 76715-46-3P 76715-47-4P 76715-48-5P 76715-49-6P
76715-50-9P 76715-51-0P 76715-52-1P 76715-53-2P 76715-54-3P
76715-55-4P 76715-56-5P 76715-57-6P 76715-58-7P 76715-59-8P
76715-60-1P 76715-61-2P 76715-62-3P 76715-63-4P 76715-64-5P
76715-65-6P 76715-66-7P 76715-67-8P 76715-68-9P 76715-69-0P
76715-70-3P 76715-71-4P 76715-72-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation, reduction, and fungicidal activity of)

IT 288-88-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with bromoacetylcyclopropane)

IT 58905-32-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with chlorobenzaldehyde)

IT 104-88-1, reactions 874-42-0
RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with triazolylpinacolone)

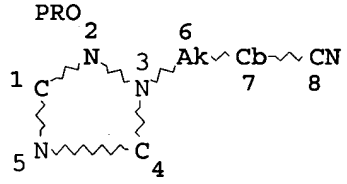
=> => file hcaplu
FILE 'HCAPLUS' ENTERED AT 14:04:14 ON 20 FEB 2007
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE COVERS 1907 - 20 Feb 2007 VOL 146 ISS 9
FILE LAST UPDATED: 19 Feb 2007 (20070219/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

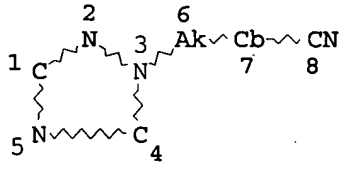
=> d que
L64 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
GGCAT IS UNS AT 7
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE
L66 14 SEA FILE=CASREACT SSS FUL L64 (37 REACTIONS)
L68 STR



as preparation

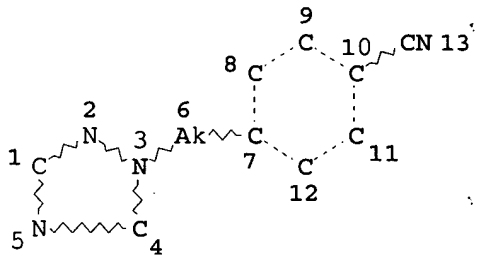
NODE ATTRIBUTES:

CONNECT IS E2 RC AT 6
DEFAULT MLEVEL IS ATOM
GGCAT IS UNS AT 7
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE

L70	67	SEA FILE=REGISTRY SSS FUL L68
L71	14	SEA FILE=HCAPLUS ABB=ON L66
L72	38	SEA FILE=HCAPLUS ABB=ON L70
L73	33	SEA FILE=HCAPLUS ABB=ON L72 NOT L71
L75	28	SEA FILE=HCAPLUS ABB=ON L72(L)PREP/RL
L76	23	SEA FILE=HCAPLUS ABB=ON L73 AND L75
L77	5	SEA FILE=HCAPLUS ABB=ON L76 AND CONDENS?
L78		STR



Subst

NODE ATTRIBUTES:
CONNECT IS E2 RC AT 2
CONNECT IS E2 RC AT 5
CONNECT IS E2 RC AT 6
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS 13

STEREO ATTRIBUTES: NONE

L80	15	SEA FILE=REGISTRY SUB=L70 SSS FUL L78
L81	20	SEA FILE=HCAPLUS ABB=ON L80
L82	14	SEA FILE=HCAPLUS ABB=ON L81(L)PREP/RL
L83	10	SEA FILE=HCAPLUS ABB=ON (L71 OR L82) NOT L71
L84	12	SEA FILE=HCAPLUS ABB=ON L83 OR L77

=> d l84 bib abs ind hitstr l84 1-12
L84 IS NOT VALID HERE
For an explanation, enter "HELP DISPLAY".

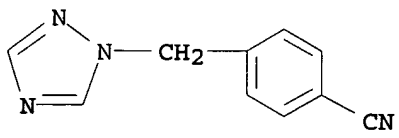
=> d l84 bib abs ind hitstr 1-12

L84 ANSWER 1 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 2006:351870 HCAPLUS
DN 145:124574
TI Process for preparation of letrozole
IN Liu, Kun; Yang, Limin
PA Beijing D-Venturepharm.T. Corp., Peop. Rep. China

SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 7 pp.
CODEN: CNXXEV
DT Patent
LA Chinese
FAN.CNT 1

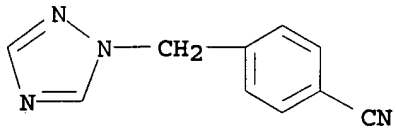
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI CN 1754876	A	20060405	CN 2004-10080092	20040928
PRAI CN 2004-10080092		20040928		

AB This invention relates to a process for preparing letrozole with high purity, which comprises reacting 4-(bromomethyl)benzonitrile with 1,2,4-triazole, separating of the 1,2,4-triazole intermediate from its 1,3,4-isomer, followed by the addition of 4-halo-benzonitrile to give the title compound
CC 28-10 (Heterocyclic Compounds (More Than One Hetero Atom))
ST letrozole prepn triazole
IT Solvents
(water soluble; preparation of letrozole)
IT **112809-25-3P 112809-26-4P 897048-77-0P**
897048-78-1P
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(intermediate; preparation of letrozole)
IT 112809-27-5P
RL: BYP (Byproduct); IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(preparation of letrozole)
IT **897048-80-5P**
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation of letrozole)
IT 112809-51-5P, Letrozole
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(preparation of letrozole)
IT 64-17-5, Ethyl alcohol, uses 67-56-1, Methanol, uses 67-64-1, Acetone, uses 68-12-2, N,N-Dimethyl formamide, uses 75-05-8, Acetonitrile, uses
RL: NUU (Other use, unclassified); USES (Uses)
(preparation of letrozole)
IT 100-47-0D, Benzonitrile, 4-halo 288-88-0, 1H-1,2,4-Triazole 1194-02-1, 4-Fluorobenzonitrile 17201-43-3, 4-Cyano-benzyl-bromide
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of letrozole)
IT **112809-25-3P 112809-26-4P 897048-77-0P**
897048-78-1P
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(intermediate; preparation of letrozole)
RN 112809-25-3 HCAPLUS
CN Benzonitrile, 4-(1H-1,2,4-triazol-1-ylmethyl)- (9CI) (CA INDEX NAME)



RN 112809-26-4 HCAPLUS
CN Benzonitrile, 4-(1H-1,2,4-triazol-1-ylmethyl)-, monohydrochloride (9CI)

(CA INDEX NAME)

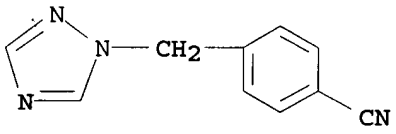


● HCl

RN 897048-77-0 HCAPLUS
CN Benzonitrile, 4-(1H-1,2,4-triazol-1-ylmethyl)-, sulfate (1:1) (9CI) (CA INDEX NAME)

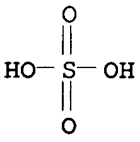
CM 1

CRN 112809-25-3
CMF C10 H8 N4



CM 2

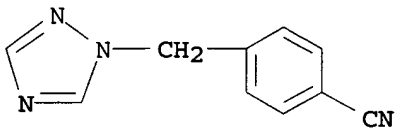
CRN 7664-93-9
CMF H2 O4 S



RN 897048-78-1 HCAPLUS
CN Benzonitrile, 4-(1H-1,2,4-triazol-1-ylmethyl)-, (2Z)-2-butenedioate (1:1) (9CI) (CA INDEX NAME)

CM 1

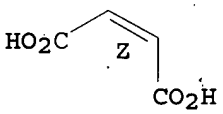
CRN 112809-25-3
CMF C10 H8 N4



CM 2

CRN 110-16-7
CMF C4 H4 O4

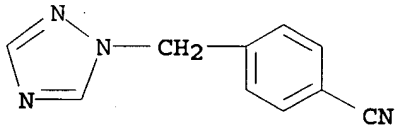
Double bond geometry as shown.



IT **897048-80-5P**
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation of letrozole)
RN 897048-80-5 HCAPLUS
CN Benzonitrile, 4-(1H-1,2,4-triazol-1-ylmethyl)-, monobenzenesulfonate (9CI) (CA INDEX NAME)

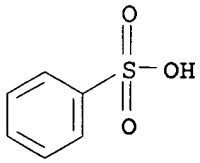
CM 1

CRN 112809-25-3
CMF C10 H8 N4



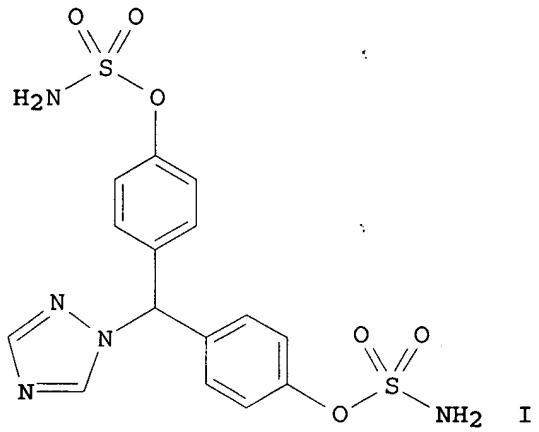
CM 2

CRN 98-11-3
CMF C6 H6 O3 S

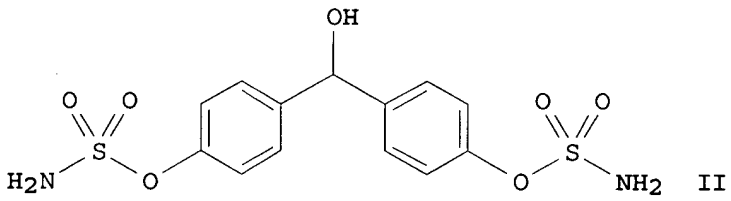


L84 ANSWER 2 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 2005:386709 HCAPLUS
DN 143:109140
TI A letrozole-based dual aromatase-sulphatase inhibitor with in vivo activity
AU Wood, Paul M.; Woo, L. W. Lawrence; Humphreys, Anna; Chander, Surinder K.; Purohit, Atul; Reed, Michael J.; Potter, Barry V. L.
CS Medicinal Chemistry, Department of Pharmacy and Pharmacology and Sterix Ltd., University of Bath, Bath, BA2 7AY, UK
SO Journal of Steroid Biochemistry and Molecular Biology (2005), 94(1-3), 123-130
CODEN: JSBBEZ; ISSN: 0960-0760
PB Elsevier B.V.
DT Journal
LA English
GI



I



II

AB The role of aromatase inhibitors in the treatment of hormone-dependent breast cancer is well established. However, it is now recognized that steroid sulfatase (STS) inhibitors represent a new form of endocrine therapy. To explore the potential advantage of dual inhibition by a single agent, we recently developed a series of dual aromatase-sulfatase inhibitors (DASIs) based on the aromatase inhibitor YM511. We report here a new structural class of DASI obtained by obtained introducing the pharmacophore for STS inhibition, i.e. a phenol sulfamate ester into another established aromatase inhibitor letrozole. Hence, the bis-sulfamate (I) was synthesized which exhibited IC50 values of 3044 nM for aromatase and >10 μM for STS in JEG-3 cells. However, at a single oral dose of 10 mg/kg, I inhibited aromatase and rat liver STS by 60% and 88%, resp., 24 h after administration. A proposed metabolite of I, carbinol (II), was synthesized. Despite also showing weak STS inhibition in JEG-3 cells, II inhibited rat liver STS activity to the same extent as I at a single oral dose of 10 mg/kg. Thus, the concept of a

letrozole-based DASI has been validated and could be further developed and modified for therapeutic exploitation.

CC 1-6 (Pharmacology)
Section cross-reference(s): 2

ST letrozole aromatase sulphatase inhibitor antitumor breast cancer

IT Antitumor agents
Human
Mammary gland, neoplasm
(letrozole-based dual aromatase-sulfatase inhibitor with in vivo activity)

IT Enzyme inhibitors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(letrozole-based dual aromatase-sulfatase inhibitor with in vivo activity)

IT 9025-62-1, Steroid Sulfatase 9039-48-9, Aromatase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(letrozole-based dual aromatase-sulfatase inhibitor with in vivo activity)

IT 112809-51-5P, Letrozole 537683-34-4P, 1-[Bis-(4-sulphamoyloxyphenyl)methyl]-1H-[1,2,4]triazole 857678-49-0P, Bis-(4-sulphamoyloxyphenyl)methanol
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(letrozole-based dual aromatase-sulfatase inhibitor with in vivo activity)

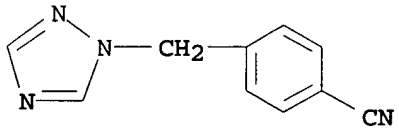
IT 288-88-0, 1H-1,2,4-Triazole 611-99-4, 4,4'-Dihydroxybenzophenone 29104-30-1, Benzomate
RL: RCT (Reactant); RACT (Reactant or reagent)
(letrozole-based dual aromatase-sulfatase inhibitor with in vivo activity)

IT 40076-84-4P, Bis-(4-benzyloxyphenyl)methanone **112809-25-3P**, 4-1-(1,2,4-Triazolyl)-methyl-benzonitrile 536975-31-2P, Bis-(4-benzyloxyphenyl)methanol 536975-32-3P, 1-[Bis-(4-benzyloxyphenyl)methyl]-1H-[1,2,4]triazole 537677-78-4P, 1-[Bis-(4-hydroxyphenyl)methyl]-1H-[1,2,4]triazole
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(letrozole-based dual aromatase-sulfatase inhibitor with in vivo activity)

IT **112809-25-3P**, 4-1-(1,2,4-Triazolyl)-methyl-benzonitrile
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(letrozole-based dual aromatase-sulfatase inhibitor with in vivo activity)

RN 112809-25-3 HCAPLUS

CN Benzonitrile, 4-(1H-1,2,4-triazol-1-ylmethyl)- (9CI) (CA INDEX NAME)



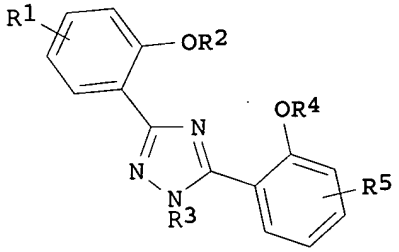
RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L84 ANSWER 3 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 2002:790230 HCAPLUS

DN 137:294961
TI Preparation of 3,5-bishydroxyphenyl-1,2,4-triazoles as pharmaceutical chelators.
IN Lattmann, Rene; Acklin, Pierre
PA Novartis AG, Switz.
SO U.S., 16 pp., Cont.-in-part of U.S. Ser. No. 202,769, abandoned.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6465504	B1	20021015	US 2000-699765	20001030
	WO 9749395	A1	19971231	WO 1997-EP3315	19970624
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU				
	RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	US 2003069273	A1	20030410	US 2002-252899	20020923
	US 6596750	B2	20030722		
	US 2003203954	A1	20031030	US 2003-447922	20030529
	US 6723742	B2	20040420		
PRAI	CH 1996-1593	A	19960625		
	WO 1997-EP3315	W	19970624		
	US 1998-202769	B2	19981221		
	US 2000-699765	A3	20001030		
	US 2002-252899	A3	20020923		

OS MARPAT 137:294961
GI



I

AB Title compds. [I; R1, R5 = H, halo, OH, alkyl, haloalkyl, alkoxy, haloalkoxy, CO2H, carbamoyl, alkylcarbamoyl, dialkylcarbamoyl, cyano; R2, R4 = H, (substituted) alkanoyl, aroyl, residue removable under physiol. conditions; R3 = H, alkyl, hydroxyalkyl, haloalkyl, carboxyalkyl, alkoxycarbonylalkyl, (substituted) carbamoyl, aryl, aralkyl, heteroaryl, heteroarylalkyl; with provisos], were prepared Thus, salicyloyl chloride and salicylamide were mixed and heated at 170° to give 2-(2-hydroxyphenyl)benz[e][1,3]oxazin-4-one. The latter was refluxed with 2-hydroxyethylhydrazine in MeOH to give 3,5-bis(2-hydroxyphenyl)-1-(2-hydroxyethyl)-1H-1,2,4-triazole. This at 100 mg/kg in rats gave 368 μg total induced Fe excretion/kg body weight
IC ICM A61K043-653
ICS C07D249-08

INCL 514383000
CC 28-10 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1
ST hydroxyphenyltriazole prepn medical chelator; triazole bishydroxyphenyl prepn medical chelator; iron excess treatment diphenyltriazole medical chelator
IT Chelating agents
(medical; preparation of bishydroxyphenyltriazoles as pharmaceutical chelators)
IT Human
(preparation of bishydroxyphenyltriazoles as pharmaceutical chelators)
IT 7439-89-6, Iron, biological studies
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(medical chelating agents for iron; preparation of bishydroxyphenyltriazoles as pharmaceutical chelators)
IT 201530-34-9P, 1H-1,2,4-Triazole-1-ethanol, 3,5-bis(2-hydroxyphenyl)- 201530-36-1P, 1H-1,2,4-Triazole-1-acetic acid, 3,5-bis(2-hydroxyphenyl)-, ethyl ester 201530-38-3P, Phenol, 2,2'-[1-(2,2,2-trifluoroethyl)-1H-1,2,4-triazole-3,5-diyl]bis- 201530-40-7P, Phenol, 2,2'-[1-(4-nitrophenyl)-1H-1,2,4-triazole-3,5-diyl]bis- 201530-41-8P, Benzoic acid, 4-[3,5-bis(2-hydroxyphenyl)-1H-1,2,4-triazol-1-yl]- 201530-43-0P, Morpholine, 4-[4-[3,5-bis(2-hydroxyphenyl)-1H-1,2,4-triazol-1-yl]benzoyl]- 201530-44-1P, Piperazine, 1-[4-[3,5-bis(2-hydroxyphenyl)-1H-1,2,4-triazol-1-yl]benzoyl]-4-methyl- 201530-45-2P, Phenol, 2,2'-[1-(4-methoxyphenyl)-1H-1,2,4-triazole-3,5-diyl]bis- 201530-46-3P, Phenol, 2,2'-[1-(2,4-difluorophenyl)-1H-1,2,4-triazole-3,5-diyl]bis- 201530-47-4P, Phenol, 2,2'-[1-(phenylmethyl)-1H-1,2,4-triazole-3,5-diyl]bis- **201530-48-5P**, Benzonitrile, 4-[[3,5-bis(2-hydroxyphenyl)-1H-1,2,4-triazol-1-yl]methyl]- 201530-49-6P, Phenol, 2,2'-[1-[[4-(diethylamino)phenyl]methyl]-1H-1,2,4-triazole-3,5-diyl]bis- 201530-50-9P, Phenol, 2,2'-[1-[[4-(1-pyrrolidinyl)phenyl]methyl]-1H-1,2,4-triazole-3,5-diyl]bis- 201530-51-0P, Phenol, 2,2'-[1-(4-pyridinylmethyl)-1H-1,2,4-triazole-3,5-diyl]bis- 201530-52-1P, Phenol, 2,2'-[1-(3-pyridinylmethyl)-1H-1,2,4-triazole-3,5-diyl]bis- 201530-53-2P, 1H-1,2,4-Triazole-1-ethanol, 3,5-bis(5-chloro-2-hydroxyphenyl)- 201530-54-3P, Benzoic acid, 4-[3,5-bis(5-chloro-2-hydroxyphenyl)-1H-1,2,4-triazol-1-yl]- 201530-55-4P, Phenol, 2,2'-[1-(2-pyridinylmethyl)-1H-1,2,4-triazole-3,5-diyl]bis[4-chloro- 201530-56-5P, Phenol, 2,2'-[1-[[4-(dimethylamino)phenyl]methyl]-1H-1,2,4-triazole-3,5-diyl]bis[4-chloro- 201530-57-6P, Benzoic acid, 4-[3,5-bis(5-fluoro-2-hydroxyphenyl)-1H-1,2,4-triazol-1-yl]- 201530-58-7P, Benzoic acid, 4-[3,5-bis(2-hydroxy-5-methylphenyl)-1H-1,2,4-triazol-1-yl]- 201530-59-8P, 1H-1,2,4-Triazole-1-acetic acid, 3,5-bis(2-hydroxyphenyl)- 201530-60-1P, 1H-1,2,4-Triazole-1-acetamide, 3,5-bis(2-hydroxyphenyl)-N-methyl- 201530-61-2P, 1H-1,2,4-Triazole-1-acetamide, N-(2-hydroxyethyl)-3,5-bis(2-hydroxyphenyl)- 201530-62-3P, 1H-1,2,4-Triazole-1-acetamide, 3,5-bis(2-hydroxyphenyl)-N-(2-methoxyethyl)- 201530-63-4P, 1H-1,2,4-Triazole-1-acetamide, N-(2,3-dihydroxypropyl)-3,5-bis(2-hydroxyphenyl)- 201530-64-5P, 1H-1,2,4-Triazole-1-acetamide, 3,5-bis(2-hydroxyphenyl)-N-[2-(4-morpholinyl)ethyl]- 201530-65-6P, 1H-1,2,4-Triazole-1-acetamide, N-(2-hydroxyethyl)-3,5-bis(2-hydroxyphenyl)-N-methyl- 201530-66-7P, 1H-1,2,4-Triazole-1-acetamide, N-[2-(2-hydroxyethoxy)ethyl]-3,5-bis(2-hydroxyphenyl)- 201530-67-8P, 1H-1,2,4-Triazole-1-acetamide, N-[2-[bis(2-hydroxyethyl)amino]ethyl]-3,5-bis(2-hydroxyphenyl)- 201530-68-9P, 1H-1,2,4-Triazole-1-acetamide, N-[2-hydroxy-1-(hydroxymethyl)ethyl]-3,5-bis(2-hydroxyphenyl)- 201530-69-0P, 1H-1,2,4-Triazole-1-acetamide, 3,5-bis(2-hydroxyphenyl)-N-[2-(4-methyl-1-piperazinyl)ethyl]- 201530-70-3P, 1H-1,2,4-Triazole-1-acetamide, 3,5-bis(2-hydroxyphenyl)-N,N-dimethyl- 201530-71-4P, Morpholine, 4-[[3,5-bis(2-hydroxyphenyl)-1H-1,2,4-triazol-1-yl]acetyl]-

201530-72-5P, Piperazine, 1-[[3,5-bis(2-hydroxyphenyl)-1H-1,2,4-triazol-1-yl]acetyl]-4-methyl- 201530-73-6P, 1H-1,2,4-Triazole-1-acetamide, 3,5-bis(2-hydroxyphenyl)-N-methyl-N-(phenylmethyl)- 201530-74-7P, 1H-1,2,4-Triazole-1-acetamide, N,N-bis(2-hydroxyethyl)-3,5-bis(2-hydroxyphenyl)- 201530-75-8P, 1H-1,2,4-Triazole-1-acetamide, N-[2-(dimethylamino)ethyl]-3,5-bis(2-hydroxyphenyl)-N-methyl- 201530-76-9P, 1H-1,2,4-Triazole-1-acetamide, 3,5-bis(5-chloro-2-hydroxyphenyl)-N-[2-(4-morpholinyl)ethyl]- 201530-77-0P, 1H-1,2,4-Triazole-1-acetic acid, 3,5-bis(5-chloro-2-hydroxyphenyl)-, ethyl ester 201530-78-1P, Benzoic acid, 2-[3,5-bis(2-hydroxyphenyl)-1H-1,2,4-triazol-1-yl]- 201530-79-2P, Benzoic acid, 4-[3,5-bis(2-hydroxyphenyl)-1H-1,2,4-triazol-1-yl]-, ethyl ester
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(preparation of bishydroxyphenyltriazoles as pharmaceutical chelators)

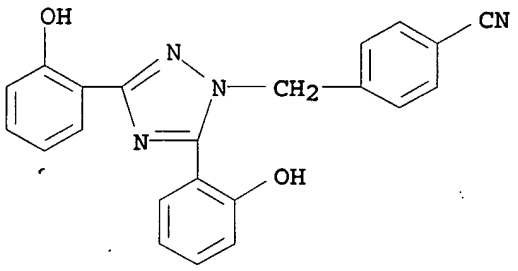
IT 65-45-2, Salicylamide 103-67-3, N-Methylbenzylamine 109-01-3, 1-Methylpiperazine 109-83-1, N-Methylethanolamine 109-84-2, 2-Hydroxyethylhydrazine 109-85-3, 2-Methoxyethylamine 110-91-8, Morpholine, reactions 111-42-2, Ethanol, 2,2'-iminobis-, reactions 141-43-5, Ethanol, 2-amino-, reactions 142-25-6, N,N,N'-Trimethylethylenediamine 321-14-2, Benzoic acid, 5-chloro-2-hydroxy- 345-16-4, 5-Fluorosalicylic acid 534-03-2, 2-Amino-1,3-propanediol 616-30-8, 3-Amino-1,2-propanediol 619-67-0, 4-Hydrazinobenzoic acid 870-46-2, tert-Butyl carbazate 929-06-6, 2-(2-Aminoethoxy)ethanol 934-98-5, 1-Piperazineethanamine, 4-methyl- 1073-62-7, Benzylhydrazine hydrochloride 1441-87-8, Salicyloyl chloride 2038-03-1, 4-(2-Aminoethyl)morpholine 3197-06-6, Ethanol, 2,2'-[(2-aminoethyl)imino]bis- 5042-30-8, 2,2,2-Trifluoroethylhydrazine 5326-27-2, 2-Hydrazinobenzoic acid 6945-92-2, Ethyl hydrazinoacetate hydrochloride 7120-43-6, Benzamide, 5-chloro-2-hydroxy- 19501-58-7, 4-Methoxyphenylhydrazine hydrochloride 24798-62-7, 4H-1,3-Benzoxazin-4-one, 2-(2-hydroxy-5-methylphenyl)-6-methyl- 26189-59-3, 1-Propen-1-amine, 1-chloro-N,N,2-trimethyl- 40594-29-4, 2,4-Difluorophenylhydrazine hydrochloride 51980-54-2, 4-Pyrrolidinobenzaldehyde 56413-74-2, 4-Nitrophenylhydrazine hydrochloride 56874-97-6, 5-Fluorosalicylamide 57616-01-0, Pyridine, 3-(hydrazinomethyl)-, monohydrochloride 89598-56-1, Pyridine, 4-(hydrazinomethyl)-, dihydrochloride 201530-83-8, 4-Cyanobenzylhydrazine hydrochloride 201530-84-9, Benzenamine, N,N-diethyl-4-(hydrazinomethyl)-, hydrochloride 201530-85-0, Pyridine, 2-(hydrazinomethyl)-, hydrochloride 201530-86-1, Benzenamine, 4-(hydrazinomethyl)-N,N-dimethyl-, hydrochloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of bishydroxyphenyltriazoles as pharmaceutical chelators)

IT 1218-69-5P, 4H-1,3-Benzoxazin-4-one, 2-(2-hydroxyphenyl)- 201530-80-5P, Pyrrolidine, 1-[4-(hydrazinomethyl)phenyl]-, hydrochloride 201530-81-6P, 4H-1,3-Benzoxazin-4-one, 6-chloro-2-(5-chloro-2-hydroxyphenyl)- 201530-82-7P, 4H-1,3-Benzoxazin-4-one, 6-fluoro-2-(5-fluoro-2-hydroxyphenyl)-
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of bishydroxyphenyltriazoles as pharmaceutical chelators)

IT **201530-48-5P**, Benzonitrile, 4-[[3,5-bis(2-hydroxyphenyl)-1H-1,2,4-triazol-1-yl]methyl]-
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(preparation of bishydroxyphenyltriazoles as pharmaceutical chelators)

RN 201530-48-5 HCAPLUS

CN Benzonitrile, 4-[[3,5-bis(2-hydroxyphenyl)-1H-1,2,4-triazol-1-yl]methyl]- (9CI) (CA INDEX NAME)



RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

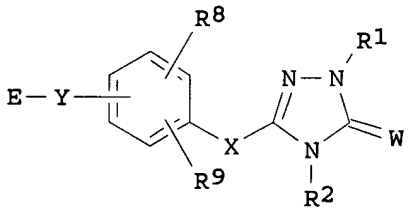
L84 ANSWER 4 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 2002:368462 HCAPLUS
DN 136:386118
TI Preparation of (phenylalkyl)-1H-[1,2,4]triazolones as PPARα agonists for treatment of cardiovascular disease associated with Syndrome X and related conditions
IN Mantlo, Nathan Bryan; Collado Cano, Ivan; Dominianni, Samuel James; Etgen, Garret Jay, Jr.; Garcia-Paredes, Cristina; Johnston, Richard Duane; Letourneau, Michael Edward; Martinelli, Michael John; Mayhugh, Daniel Ray; Saeed, Ashraf; Thompson, Richard Craig; Wang, Xiadong; Coffey, David Scott; Schmid, Christopher Randall; Vicenzi, Jeffrey Thomas; Xu, Yanping
PA Eli Lilly and Company, USA
SO PCT Int. Appl., 388 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002038553	A2	20020516	WO 2001-US42928	20011109
	WO 2002038553	A3	20030501		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	CA 2421154	A1	20020516	CA 2001-2421154	20011109
	AU 200228592	A	20020521	AU 2002-28592	20011109
	EP 1335908	A2	20030820	EP 2001-989704	20011109
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	BR 2001014986	A	20030923	BR 2001-14986	20011109
	HU 200301655	A2	20031229	HU 2003-1655	20011109
	JP 2004513166	T	20040430	JP 2002-541088	20011109
	NZ 524569	A	20060526	NZ 2001-524569	20011109
	IN 2003KN00278	A	20050311	IN 2003-KN278	20030306

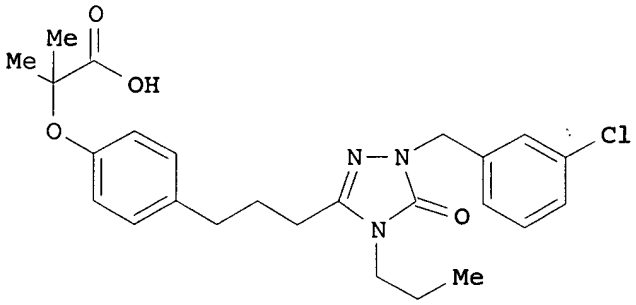
	ZA 2003002517	A	20040630	ZA 2003-2517	20030331
	NO 2003002059	A	20030624	NO 2003-2059	20030508
	HR 2003000365	A1	20030831	HR 2003-365	20030508
	US 2004102500	A1	20040527	US 2003-415673	20030911
	AU 2006202811	A1	20060720	AU 2006-202811	20060629
PRAI	US 2000-247317P	P	20001110		
	WO 2001-US42928	W	20011109		

OS MARPAT 136:386118

GI



I



II

AB Title compds. I [wherein R1 = H or (un)substituted alkyl, (hetero)arylalkyl, cycloalkylarylalkyl, CH2COR17R18; R17 = O or NH; R18 = (un)substituted benzyl; W = O or S; R2 = H or (un)substituted (cyclo)alkyl, allyl, (hetero)arylalkyl, sulfonamido, amido, or OR10; R10 = H or alkyl; X = (un)substituted alkylene linker wherein 1 C may be replaced with O, NH, or S; Y = C, O, S, NH, or a single bond; E = H, CR3R4A; A, (un)substituted (CH2)nCO2C19, (aryl)alkyl, allyl, thioalkyl, thioaryl, alkoxyaryl, alkoxyalkyl, aminoaryl, or aminoalkyl; n = 0-3; A = carboxy, alkylnitrile, carboxamide, or (un)substituted sulfonamide, acylsulfonamide, or tetrazole; R3 = H, alkyl, or alkoxy; R4 = H, halo, or (un)substituted (cyclo)alkyl, alkoxy, arylalkyl, or Ph; or CR3R4 = cycloalkyl; R19 = H or (un)substituted arylmethyl or alkyl; R8 = independently H, alkyl, alkenyl, or halo; R9 = independently H, alkenyl, halo, allyl, OR10, or (un)substituted alkyl or (hetero)aryl; R10 = independently H or alkyl] were prepared as peroxisome proliferator activated receptor alpha (PPARα) agonists. For example, **condensation** of 3-chlorobenzaldehyde with 4-(4-hydroxyphenyl)butyrylhydrazide (p-TsOH, i-PrOH), followed by reduction (NaBH3CN, THF, AcOH, i-PrOH), treatment with n-PrNCO (THF), and cyclization (KOH, MeOH), afforded 2-(3-chlorobenzyl)-5-[3-(4-hydroxyphenyl)propyl]-4-propyl-3H-triazolin-3-one. Addition of tert-Bu 2-bromoisobutyrate (K2CO3, DMF) and deesterification (TFA, CH2Cl2) gave II. I bound to PPARα receptors with IC50 values of ≤ 100 nM and demonstrated PPARα cotransfection efficacy in CV-1 cells of ≥ 50%. Significant reduction in RQ in female Ay mice [0.864 ± 0.013 (control) vs. 0.803 ± 0.007 (treated); $p < 0.001$] was observed at doses of 50 mg/kg of I. Addnl., treated animals displayed significantly higher

rates of energy expenditure than control animals (17.40 ± 0.49 vs. 13.62 ± 0.26 kcal/kg/h, resp.). Thus, I are useful for the prevention and/or treatment of cardiovascular disease associated with Syndrome X, hyperinsulemia, hypertension, elevated body weight, elevate triglycerides, and elevated LDL.

IC ICM C07D249-12
ICS A61K031-4196; C07D401-06; C07D413-06; C07D409-06; C07D409-12; C07D417-12; C07D405-06; A61K031-4439; A61K031-427; C07C257-22; C07C281-04; C07C281-06

CC 28-10 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1

ST phenylalkyl triazolone prepn peroxisome proliferator activated receptor alpha agonist; triazolone phenylalkyl prepn Syndrome X treatment; triazolylalkylphenoxy propionate prepn cardiovascular agents

IT Glycerides, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(blood; preparation of (phenylalkyl)triazolones as PPARα agonists for treatment of cardiovascular disease associated with Syndrome X and related conditions)

IT Heart, disease
(cardiac syndrome X, treatment; preparation of (phenylalkyl)triazolones as PPARα agonists for treatment of cardiovascular disease associated with Syndrome X and related conditions)

IT Antihypertensives
Antiobesity agents
Cardiovascular agents
Human
(preparation of (phenylalkyl)triazolones as PPARα agonists for treatment of cardiovascular disease associated with Syndrome X and related conditions)

IT Low-density lipoproteins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(preparation of (phenylalkyl)triazolones as PPARα agonists for treatment of cardiovascular disease associated with Syndrome X and related conditions)

IT Peroxisome proliferator-activated receptors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(α; preparation of (phenylalkyl)triazolones as PPARα agonists for treatment of cardiovascular disease associated with Syndrome X and related conditions)

IT 425669-52-9P 425669-58-5P 425669-59-6P 425669-60-9P 425669-61-0P
425669-62-1P 425669-63-2P 425669-64-3P 425669-65-4P 425669-95-0P
425670-03-7P 425670-33-3P 425670-65-1P 425672-17-9P
RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(cardiovascular agent; preparation of (phenylalkyl)triazolones as PPARα agonists for treatment of cardiovascular disease associated with Syndrome X and related conditions)

IT 425669-53-0P 425669-54-1P 425669-55-2P 425669-56-3P 425669-57-4P
425669-67-6P 425669-68-7P 425669-69-8P 425669-70-1P 425669-71-2P
425669-72-3P 425669-73-4P 425669-74-5P 425669-75-6P 425669-76-7P
425669-77-8P 425669-78-9P 425669-79-0P 425669-80-3P 425669-81-4P
425669-82-5P 425669-83-6P 425669-84-7P 425669-85-8P 425669-86-9P
425669-87-0P 425669-88-1P 425669-89-2P 425669-90-5P 425669-91-6P
425669-92-7P 425669-93-8P 425669-94-9P 425669-96-1P 425669-97-2P
425669-98-3P 425669-99-4P 425670-00-4P 425670-01-5P 425670-02-6P
425670-04-8P **425670-05-9P 425670-06-0P** 425670-07-1P
425670-08-2P 425670-09-3P 425670-10-6P 425670-11-7P 425670-12-8P
425670-13-9P 425670-14-0P 425670-15-1P 425670-16-2P 425670-17-3P

425670-18-4P 425670-19-5P 425670-20-8P 425670-21-9P 425670-22-0P
425670-23-1P 425670-24-2P 425670-25-3P 425670-26-4P 425670-28-6P
425670-29-7P 425670-31-1P 425670-32-2P 425670-34-4P 425670-35-5P
425670-36-6P 425670-37-7P 425670-38-8P 425670-39-9P 425670-40-2P
425670-41-3P 425670-42-4P 425670-43-5P 425670-44-6P 425670-45-7P
425670-46-8P 425670-47-9P **425670-48-0P** 425670-49-1P
425670-50-4P 425670-51-5P 425670-53-7P 425670-56-0P
425670-57-1P 425670-58-2P 425670-59-3P 425670-60-6P 425670-61-7P
425670-62-8P 425670-63-9P 425670-66-2P 425670-67-3P 425670-68-4P
425670-69-5P 425670-71-9P 425670-72-0P 425670-74-2P 425670-77-5P
425670-78-6P 425670-80-0P 425670-83-3P **425670-85-5P**
425670-87-7P 425670-89-9P **425670-92-4P** 425670-94-6P
425670-96-8P 425670-98-0P 425670-99-1P 425671-00-7P 425671-01-8P
425671-02-9P 425671-03-0P 425671-04-1P 425671-05-2P
425671-06-3P 425671-07-4P 425671-08-5P 425671-11-0P
425671-12-1P 425671-13-2P 425671-14-3P 425671-15-4P 425671-16-5P
425671-17-6P 425671-18-7P 425671-19-8P **425671-20-1P**
425671-21-2P 425671-22-3P 425671-23-4P 425671-24-5P 425671-25-6P
425671-26-7P 425671-27-8P 425671-28-9P 425671-29-0P 425671-30-3P
425671-31-4P 425671-32-5P 425671-33-6P 425671-34-7P 425671-35-8P
425671-36-9P 425671-37-0P 425671-38-1P 425671-39-2P 425671-40-5P
425671-41-6P 425671-42-7P 425671-43-8P 425671-44-9P 425671-45-0P
425671-46-1P 425671-47-2P 425671-48-3P 425671-49-4P 425671-50-7P
425671-51-8P 425671-52-9P 425671-53-0P 425671-54-1P 425671-55-2P
425671-56-3P 425671-57-4P 425671-58-5P 425671-59-6P 425671-60-9P
425671-61-0P 425671-62-1P 425671-63-2P 425671-64-3P 425671-65-4P
425671-66-5P 425671-67-6P 425671-68-7P 425671-69-8P 425671-70-1P
425671-71-2P 425671-72-3P 425671-73-4P 425671-74-5P 425671-75-6P
425671-76-7P 425671-77-8P 425671-78-9P 425671-79-0P 425671-80-3P
425671-81-4P 425671-82-5P 425671-83-6P 425671-84-7P 425671-85-8P
425671-86-9P 425671-87-0P 425671-88-1P 425671-89-2P 425671-90-5P
425671-91-6P 425671-92-7P 425671-93-8P 425671-94-9P 425671-95-0P
425671-96-1P 425671-97-2P 425671-98-3P 425671-99-4P 425672-00-0P
425672-01-1P 425672-02-2P, 2-[4-[3-[1-(3-Methoxybenzyl)-5-oxo-4,5-dihydro-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-2-methylpropionic acid
425672-03-3P 425672-04-4P 425672-05-5P 425672-06-6P 425672-07-7P, 2-Methyl-2-[4-[2-[5-oxo-4-propyl-1-(4-trifluoromethylphenyl)-4,5-dihydro-1H-1,2,4-triazol-3-yl]ethyl]phenoxy]propionic acid 425672-08-8P, [4-[2-[5-Oxo-4-propyl-1-(4-trifluoromethylphenyl)-4,5-dihydro-1H-1,2,4-triazol-3-yl]ethyl]phenoxy]acetic acid 425672-09-9P 425672-10-2P 425672-11-3P, [4-[2-[4-[2-(2-Fluorophenyl)ethyl]-5-oxo-1-(4-trifluoromethylphenyl)-4,5-dihydro-1H-1,2,4-triazol-3-yl]ethyl]phenoxy]acetic acid 425672-12-4P, 2-[4-[2-[4-[2-(2-Fluorophenyl)ethyl]-5-oxo-1-(4-trifluoromethylphenyl)-4,5-dihydro-1H-1,2,4-triazol-3-yl]ethyl]phenoxy]-2-methylpropionic acid 425672-13-5P, [4-[3-[4-[2-(2-Fluorophenyl)ethyl]-5-oxo-1-(4-trifluoromethylphenyl)-4,5-dihydro-1H-1,2,4-triazol-3-yl]propyl]phenoxy]acetic acid 425672-14-6P, 2-[4-[3-[4-[2-(2-Fluorophenyl)ethyl]-5-oxo-1-(4-trifluoromethylphenyl)-4,5-dihydro-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-2-methylpropionic acid
425672-15-7P 425672-16-8P 425672-18-0P 425672-19-1P, [2-Iodo-4-[2-[5-oxo-4-propyl-1-(4-trifluoromethylphenyl)-4,5-dihydro-1H-1,2,4-triazol-3-yl]ethyl]phenoxy]acetic acid 425672-20-4P, [4-[2-[4-[2-(2-Fluorophenyl)ethyl]-5-oxo-1-(4-trifluoromethylphenyl)-4,5-dihydro-1H-1,2,4-triazol-3-yl]ethyl]-2-methylphenoxy]acetic acid
425672-21-5P, 2-[4-[2-[4-[2-(2-Fluorophenyl)ethyl]-5-oxo-1-(4-trifluoromethylphenyl)-4,5-dihydro-1H-1,2,4-triazol-3-yl]ethyl]-2-methylphenoxy]-2-methylpropionic acid 425672-22-6P, [4-[3-[4-[2-(2-Fluorophenyl)ethyl]-5-oxo-1-(4-trifluoromethylphenyl)-4,5-dihydro-1H-1,2,4-triazol-3-yl]propyl]-2-methylphenoxy]acetic acid 425672-23-7P, 2-[4-[3-[4-[2-(2-Fluorophenyl)ethyl]-5-oxo-1-(4-trifluoromethylphenyl)-4,5-

dihydro-1H-1,2,4-triazol-3-yl]propyl]-2-methylphenoxy]-2-methylpropionic acid
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(cardiovascular agent; preparation of (phenylalkyl)triazolones as PPARα agonists for treatment of cardiovascular disease associated with Syndrome X and related conditions)

IT 425672-24-8P 425672-25-9P 425672-26-0P 425672-27-1P 425672-29-3P 425672-30-6P 425672-31-7P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(cardiovascular agent; preparation of (phenylalkyl)triazolones as PPARα agonists for treatment of cardiovascular disease associated with Syndrome X and related conditions)

IT 9004-10-8, Insulin, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(hyperinsulinemia, treatment; preparation of (phenylalkyl)triazolones as PPARα agonists for treatment of cardiovascular disease associated with Syndrome X and related conditions)

IT 13923-56-3P 15823-04-8P 20637-08-5P, Methyl 4-(4-methoxyphenyl)butyrate 22320-10-1P, Methyl 4-(4-hydroxyphenyl)butyrate 24469-50-9P 31600-43-8P 34674-93-6P, 4-(4-Hydroxyphenyl)butyric Acid 50704-52-4P 51336-47-1P 53370-84-6P 57676-49-0P 92547-53-0P 105238-87-7P, 3-(4-Methoxyphenyl)-N-propylpropionamide 106728-61-4P 112961-39-4P 121670-33-5P 123566-47-2P 162739-90-4P 194163-50-3P 237064-46-9P 348162-63-0P 402617-08-7P 402723-13-1P 425669-66-5P 425672-32-8P 425672-33-9P 425672-34-0P 425672-35-1P 425672-36-2P 425672-37-3P 425672-38-4P 425672-39-5P 425672-40-8P 425672-41-9P 425672-42-0P 425672-43-1P 425672-44-2P 425672-45-3P 425672-46-4P 425672-47-5P 425672-48-6P 425672-49-7P 425672-50-0P 425672-51-1P 425672-52-2P 425672-53-3P 425672-54-4P 425672-55-5P 425672-56-6P 425672-57-7P 425672-58-8P 425672-59-9P 425672-60-2P 425672-61-3P 425672-62-4P 425672-63-5P 425672-64-6P 425672-65-7P 425672-66-8P 425672-67-9P 425672-68-0P 425672-69-1P 425672-70-4P 425672-71-5P 425672-72-6P 425672-73-7P 425672-74-8P 425672-75-9P 425672-76-0P 425672-77-1P 425672-78-2P 425672-79-3P 425672-80-6P 425672-81-7P 425672-82-8P 425672-83-9P 425672-84-0P 425672-85-1P 425672-86-2P 425672-87-3P 425672-88-4P 425672-89-5P 425672-90-8P 425672-91-9P 425672-92-0P 425672-93-1P 425672-94-2P 425672-95-3P 425672-96-4P 425672-97-5P 425672-98-6P 425672-99-7P 425673-00-3P 425673-01-4P 425673-02-5P 425673-03-6P 425673-04-7P 425673-05-8P 425673-06-9P 425673-07-0P 425673-08-1P 425673-09-2P 425673-10-5P 425673-11-6P 425673-12-7P 425673-13-8P 425673-14-9P **425673-15-0P** **425673-16-1P** 425673-17-2P 425673-18-3P 425673-19-4P 425673-20-7P 425673-21-8P 425673-22-9P 425673-23-0P 425673-24-1P 425673-25-2P 425673-26-3P 425673-27-4P 425673-28-5P 425673-29-6P 425673-30-9P 425673-31-0P 425673-32-1P 425673-33-2P 425673-34-3P 425673-35-4P 425673-36-5P 425673-37-6P 425673-38-7P 425673-39-8P 425673-40-1P 425673-41-2P 425673-42-3P 425673-43-4P 425673-44-5P 425673-45-6P 425673-46-7P 425673-47-8P 425673-48-9P 425673-49-0P 425673-50-3P 425673-51-4P 425673-52-5P 425673-53-6P 425673-54-7P 425673-55-8P 425673-56-9P 425673-57-0P 425673-58-1P 425673-59-2P 425673-60-5P **425673-61-6P** 425673-62-7P **425673-63-8P** 425673-64-9P 425673-65-0P 425673-66-1P 425673-67-2P 425673-68-3P 425673-69-4P 425673-70-7P 425673-71-8P 425673-72-9P 425673-73-0P 425673-74-1P 425673-75-2P 425673-76-3P 425673-77-4P 425673-78-5P 425673-79-6P 425673-80-9P 425673-81-0P 425673-82-1P 425673-83-2P 425673-84-3P 425673-85-4P 425673-86-5P **425673-87-6P**

425673-88-7P 425673-89-8P **425673-90-1P** 425673-91-2P
425673-92-3P 425673-93-4P 425673-94-5P 425673-95-6P 425673-96-7P
425673-97-8P 425673-98-9P 425673-99-0P 425674-00-6P
425674-01-7P 425674-02-8P 425674-03-9P 425674-04-0P
425674-05-1P 425674-06-2P 425674-07-3P 425674-08-4P 425674-09-5P
425674-10-8P 425674-11-9P 425674-12-0P 425674-13-1P 425674-14-2P
425674-15-3P 425674-16-4P 425674-17-5P 425674-18-6P 425674-19-7P
425674-20-0P 425674-21-1P 425674-22-2P 425674-23-3P 425674-24-4P
425674-25-5P 425674-26-6P 425674-27-7P 425674-28-8P 425674-29-9P
425674-30-2P 425674-31-3P 425674-32-4P 425674-33-5P 425674-34-6P
425674-35-7P 425674-36-8P 425674-37-9P 425674-38-0P 425674-39-1P
425674-40-4P 425674-41-5P 425674-42-6P 425674-43-7P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(intermediate; preparation of (phenylalkyl)triazolones as PPARα agonists for treatment of cardiovascular disease associated with Syndrome X and related conditions)

IT 425674-44-8P 425674-45-9P 425674-46-0P 425674-47-1P 425674-48-2P
425674-49-3P 425674-50-6P 425674-51-7P 425674-52-8P 425674-53-9P
425674-54-0P 425674-55-1P 425674-56-2P 425674-57-3P 425674-58-4P
425674-59-5P 425674-60-8P 425674-61-9P 425674-62-0P 425674-63-1P
425674-64-2P 425674-65-3P 425674-66-4P 425674-67-5P 425674-68-6P
425674-69-7P 425674-70-0P 425674-71-1P 425674-72-2P 425674-73-3P
425674-74-4P 425674-75-5P 425674-76-6P 425674-77-7P 425674-78-8P
425674-79-9P 425674-80-2P 425674-81-3P 425674-82-4P 425674-83-5P
425674-84-6P 425674-85-7P 425674-86-8P 425674-87-9P 425674-88-0P
425674-89-1P 425674-90-4P 425674-91-5P 425674-92-6P 425674-93-7P
425674-94-8P 425674-95-9P 425674-96-0P 425674-97-1P 425674-98-2P
425674-99-3P 425675-00-9P 425675-01-0P 425675-02-1P 425675-03-2P
425675-04-3P 425675-05-4P 425675-06-5P 425675-07-6P 425675-08-7P
425675-09-8P 425675-10-1P 425675-11-2P 425675-12-3P 425675-13-4P
425675-14-5P 425675-15-6P 425675-16-7P 425675-17-8P,
2-[4-[3-[1-(4-tert-Butylbenzyl)-4-methyl-5-oxo-4,5-dihydro-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-3-(4-fluorophenyl)-2-methylpropionic acid ethyl ester 425675-18-9P 425675-19-0P 425675-20-3P 425675-21-4P,
2-Methyl-2-[4-[3-[4-methyl-5-oxo-1-(3-trifluoromethylbenzyl)-4,5-dihydro-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-3-phenylpropionic acid ethyl ester 425675-22-5P 425675-23-6P 425675-24-7P, 2-[4-[3-[4-Methyl-5-oxo-1-(3-phenoxybenzyl)-4,5-dihydro-1H-1,2,4-triazol-3-yl]propyl]phenoxy]propionic acid ethyl ester 425675-25-8P, 2-Methyl-2-[4-[3-[4-methyl-5-oxo-1-(3-phenoxybenzyl)-4,5-dihydro-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-3-phenylpropionic acid ethyl ester 425675-26-9P 425675-27-0P 425675-29-2P 425675-30-5P 425675-31-6P, 2-[4-[3-[1-(3-Methoxybenzyl)-5-oxo-4,5-dihydro-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-2-methylpropionic acid ethyl ester 425675-32-7P 425675-33-8P 425675-34-9P 425675-35-0P 425675-36-1P 425675-37-2P 425675-39-4P 425675-40-7P 425675-41-8P, 2-Methyl-2-[4-[3-[1-(4-methylbenzyl)-5-oxo-4-propyl-4,5-dihydro-1H-1,2,4-triazol-3-yl]propyl]phenoxy]propionic acid ethyl ester 425675-42-9P, 4-[4-(1-Ethoxycarbonyl-1-methylethoxy)phenyl]butyric acid 425675-43-0P 425675-45-2P 425675-46-3P 425675-48-5P 425675-50-9P 425675-51-0P 425675-52-1P, 2-[4-[3-[1-(3,5-Difluorobenzyl)-5-oxo-4,5-dihydro-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-2-methylpropionic acid ethyl ester 425675-53-2P 425675-54-3P 425675-56-5P 425675-57-6P 425675-58-7P 425675-59-8P 425675-60-1P 425675-62-3P 425675-63-4P 425675-64-5P, 2-[4-[3-(1-Phenylmethyl-5-oxo-4-propyl-4,5-dihydro-1H-1,2,4-triazol-3-yl)propyl]phenoxy]-2-methylpropionic acid ethyl ester 425675-65-6P 425675-66-7P 425675-67-8P 425675-68-9P 425675-70-3P 425675-71-4P 425675-72-5P, 2-[4-[3-[4-Ethyl-1-(naphthalen-2-yl)methyl-5-oxo-4,5-dihydro-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-2-methylpropionic acid ethyl ester 425675-73-6P 425675-74-7P 425675-75-8P

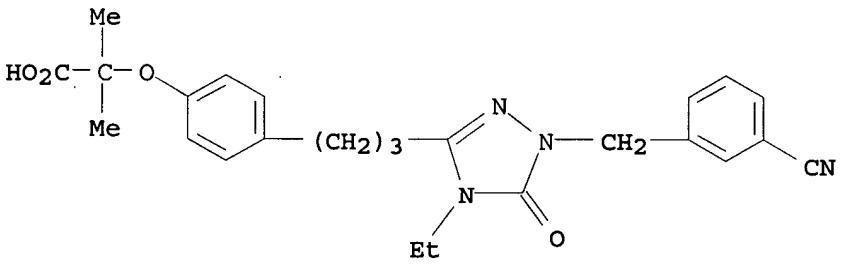
425675-76-9P 425675-78-1P 425675-79-2P 425675-80-5P 425675-81-6P
425675-82-7P 425675-84-9P 425675-85-0P 425675-86-1P,
2-[4-[3-[1-(4-tert-Butylphenylmethyl)-4-methyl-5-oxo-4,5-dihydro-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-2-methylpropionic acid ethyl ester
425675-87-2P, 3-(4-Methoxyphenyl)-N-propylpropionimidic acid methyl ester
425675-88-3P 425675-89-4P 425675-90-7P 425675-91-8P,
2-Methyl-2-[4-[2-[5-oxo-4-propyl-1-(4-trifluoromethylphenyl)-4,5-dihydro-1H-1,2,4-triazol-3-yl]ethyl]phenoxy]propionic acid ethyl ester
425675-92-9P, [2-Iodo-4-[2-[5-oxo-4-propyl-1-(4-trifluoromethylphenyl)-4,5-dihydro-1H-1,2,4-triazol-3-yl]ethyl]phenoxy]acetic acid ethyl ester
425675-94-1P 425675-95-2P 425675-96-3P 425675-97-4P 425675-98-5P
425675-99-6P 425676-00-2P 425676-01-3P 425676-02-4P 425676-03-5P
425676-04-6P 425676-05-7P 425676-06-8P 425676-07-9P 425676-08-0P
425676-09-1P 425676-10-4P 425676-11-5P 425676-12-6P 425676-13-7P
425676-15-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; preparation of (phenylalkyl)triazolones as PPARα agonists for treatment of cardiovascular disease associated with Syndrome X and related conditions)

IT 66-99-9, 2-Naphthaldehyde 96-32-2, Methyl bromoacetate 98-10-2, Benzenesulfonamide 102-46-5, 3,4-Dimethylbenzyl chloride 102-48-7, 3,4-Dimethylbenzylamine 103-63-9, Phenethyl bromide 104-81-4, 4-Methylbenzyl bromide 104-82-5, α-Chloro-p-xylene 104-84-7, 4-Methylbenzylamine 104-87-0, p-Methyl benzaldehyde 105-13-5, 4-Methoxybenzyl alcohol 105-36-2, Ethyl bromoacetate 109-90-0, Ethyl isocyanate 110-78-1, Propyl isocyanate 111-36-4, Butyl isocyanate 368-90-1, 4-Trifluoromethylphenylhydrazine 402-23-3, 3-Trifluoromethylbenzyl bromide 452-35-7, 6-Ethoxy-2-benzothiazolesulfonamide 459-46-1, 4-Fluorobenzyl bromide 513-38-2, 1-Iodo-2-methylpropane 535-11-5, Ethyl 2-bromopropionate 587-04-2, 3-Chlorobenzaldehyde 591-31-1, m-Anisaldehyde 592-55-2, 2-Bromoethyl ethyl ether 600-00-0, Ethyl 2-bromoisobutyrate 620-24-6, 3-Hydroxybenzyl alcohol 627-18-9, 1-Bromo-3-hydroxypropane 637-59-2, 3-Phenylpropyl bromide 765-30-0, Cyclopropylamine 766-80-3, m-Chlorobenzyl bromide 816-40-0, 1-Bromobutan-2-one 870-46-2, tert-Butyl carbazate 927-68-4, 2-Bromoethyl acetate 939-26-4, 2-Bromomethylnaphthalene 939-97-9, 4-tert-Butylbenzaldehyde 1129-26-6, 4-Methoxybenzenesulfonamide 1576-47-2, Naphthalene-2-sulfonamide 1761-61-1, 5-Bromosalicylaldehyde 1929-29-9, 3-(4-Methoxyphenyl)propionic acid 2525-62-4, Hexyl isocyanate 2969-81-5, Ethyl 4-bromobutyrate 3173-56-6, Benzyl isocyanate 3395-91-3 3840-30-0, 3,4,5-Trimethoxybenzyl chloride 3954-13-0, Pentyl isocyanate 4377-33-7, 2-Chloromethylpyridine 4521-28-2, 4-(4-Methoxyphenyl)butyric acid 4563-33-1, α-Toluenesulfonamide 4897-84-1, Methyl 4-bromobutyrate 5071-96-5, 3-Methoxybenzylamine 5406-18-8, 3-(4-Methoxyphenyl)-1-propanol 5437-45-6, Benzyl bromoacetate 5469-26-1, 1-Bromo-3,3-dimethylbutan-2-one 5973-71-7, 3,4-Dimethylbenzaldehyde 6065-66-3, 2-Bromoethylbutyrate 6287-38-3, 3,4-Dichlorobenzaldehyde 6482-24-2, 2-Bromoethyl methyl ether 7051-34-5, Bromomethylcyclopropane 10385-30-5, 4-Benzyloxybutyric acid 10445-91-7, 4-Chloromethylpyridine 10516-71-9, 3-(3-Methoxyphenyl)propionic acid 16889-72-8, tert-Butyl isobutyrate 17260-71-8, 3-Chlorobenzenesulfonamide 18880-00-7, 4-(tert-Butyl)benzyl bromide 23786-14-3, Methyl 4-methoxyphenylacetate 23877-12-5, tert-Butyl 2-bromoisobutyrate 27129-86-8, 3,5-Dimethylbenzyl bromide 27913-58-2, 4-(p-Iodophenyl)butyric acid 30379-55-6, Benzyloxyacetic acid 31469-15-5, 1-Methoxy-1-trimethylsiloxy-2-methyl-1-propene 32085-88-4, 3,5-Difluorobenzaldehyde 36978-34-4, 4-Bromobutyl benzoate 52244-70-9, 4-(4-Methoxyphenyl)-1-butanol 53595-65-6,

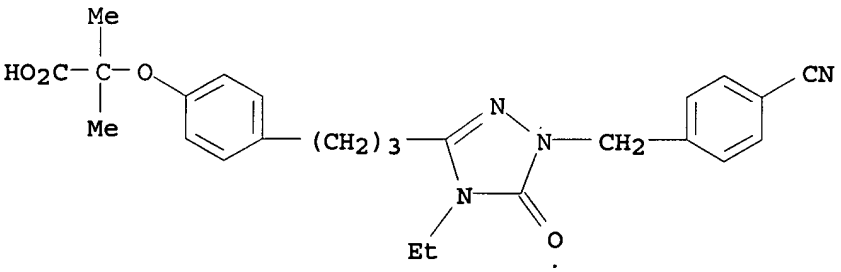
5-Bromothiophene-2-sulfonamide 53874-66-1, 3-Phenoxybenzyl chloride 57816-01-0 58336-71-3, Ethyl 2-[4-(bromomethyl)phenoxy]-2-methylpropionate 93489-13-5, 2,4-Dimethoxybenzyl isocyanate 93489-19-1, 2,4,6-Trimethoxybenzyl isocyanate 94416-66-7, 3,4-Dimethylbenzyl bromide 152270-53-6, 2-(4-Hydroxyphenyl)-2-methylpropanoic acid ethyl ester 166960-23-2 247923-30-4, tert-Butyl 2-(4-bromophenylsulfanyl)-2-methylpropionate 425675-93-0, [4-[2-[5-Oxo-4-propyl-1-(4-trifluoromethylphenyl)-4,5-dihydro-1H-1,2,4-triazol-3-yl]ethyl]phenoxy]acetic acid ethyl ester 425676-19-3 425676-20-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant; preparation of (phenylalkyl)triazolones as PPARα agonists for treatment of cardiovascular disease associated with Syndrome X and related conditions)

IT **425670-05-9P 425670-06-0P 425670-48-0P**
425670-50-4P 425670-85-5P 425670-92-4P
425671-06-3P 425671-17-6P 425671-20-1P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(cardiovascular agent; preparation of (phenylalkyl)triazolones as PPARα agonists for treatment of cardiovascular disease associated with Syndrome X and related conditions)

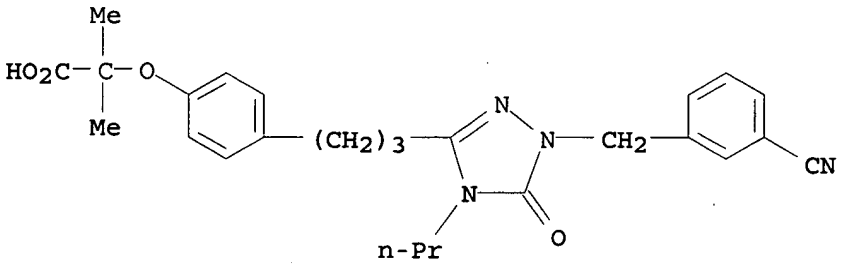
RN 425670-05-9 HCAPLUS
CN Propanoic acid, 2-[4-[3-[1-[(3-cyanophenyl)methyl]-4-ethyl-4,5-dihydro-5-oxo-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-2-methyl- (9CI) (CA INDEX NAME)



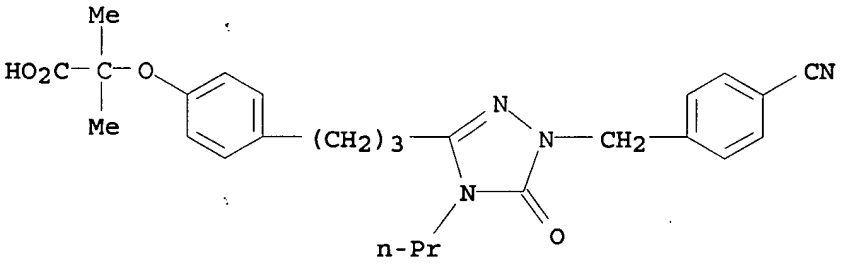
RN 425670-06-0 HCAPLUS
CN Propanoic acid, 2-[4-[3-[1-[(4-cyanophenyl)methyl]-4-ethyl-4,5-dihydro-5-oxo-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-2-methyl- (9CI) (CA INDEX NAME)



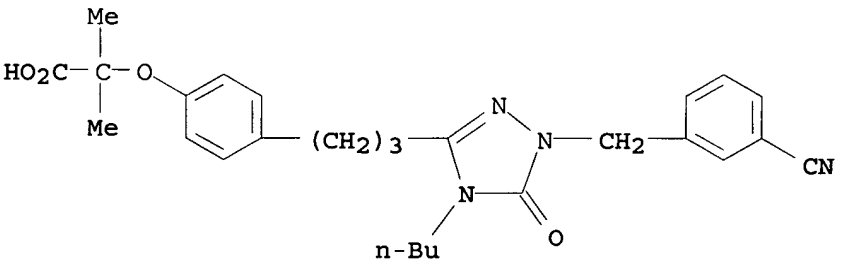
RN 425670-48-0 HCAPLUS
CN Propanoic acid, 2-[4-[3-[1-[(3-cyanophenyl)methyl]-4,5-dihydro-5-oxo-4-propyl-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-2-methyl- (9CI) (CA INDEX NAME)



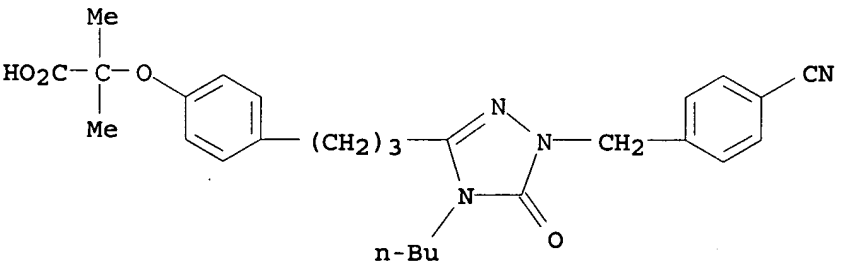
RN 425670-50-4 HCAPLUS
CN Propanoic acid, 2-[4-[3-[1-[(4-cyanophenyl)methyl]-4,5-dihydro-5-oxo-4-propyl-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-2-methyl- (9CI) (CA INDEX NAME)



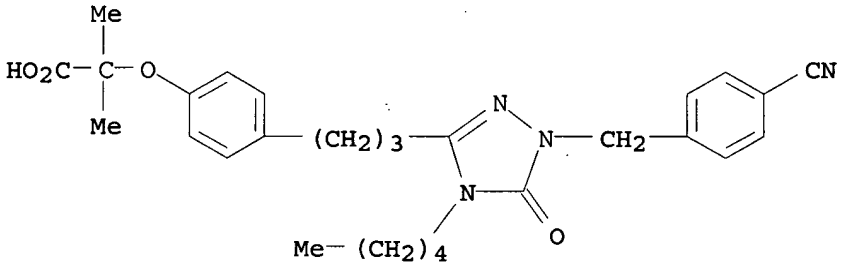
RN 425670-85-5 HCAPLUS
CN Propanoic acid, 2-[4-[3-[4-butyl-1-[(3-cyanophenyl)methyl]-4,5-dihydro-5-oxo-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-2-methyl- (9CI) (CA INDEX NAME)



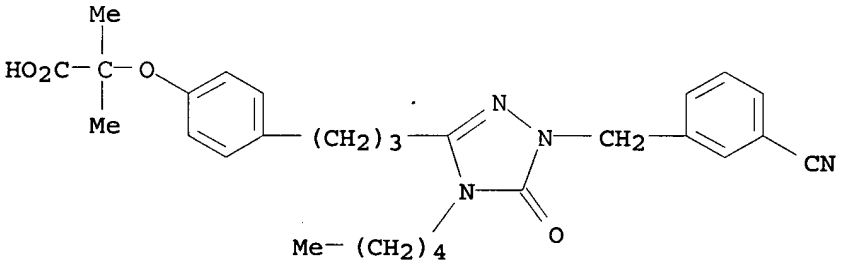
RN 425670-92-4 HCAPLUS
CN Propanoic acid, 2-[4-[3-[4-butyl-1-[(4-cyanophenyl)methyl]-4,5-dihydro-5-oxo-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-2-methyl- (9CI) (CA INDEX NAME)



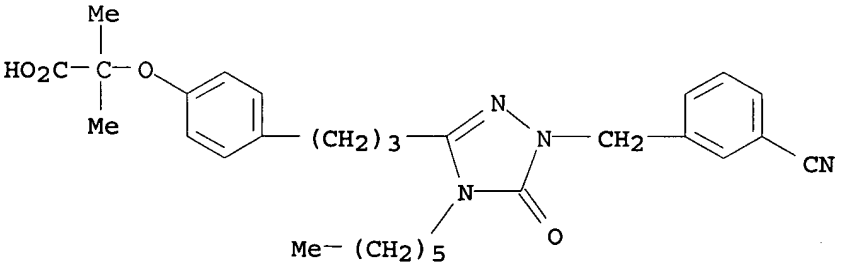
RN 425671-06-3 HCAPLUS
CN Propanoic acid, 2-[4-[3-[1-[(4-cyanophenyl)methyl]-4,5-dihydro-5-oxo-4-pentyl-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-2-methyl- (9CI) (CA INDEX NAME)



RN 425671-17-6 HCAPLUS
CN Propanoic acid, 2-[4-[3-[1-[(3-cyanophenyl)methyl]-4,5-dihydro-5-oxo-4-pentyl-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-2-methyl- (9CI) (CA INDEX NAME)



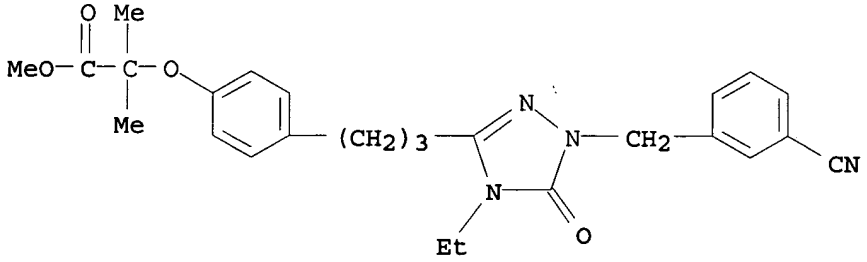
RN 425671-20-1 HCAPLUS
CN Propanoic acid, 2-[4-[3-[1-[(3-cyanophenyl)methyl]-4-hexyl-4,5-dihydro-5-oxo-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-2-methyl- (9CI) (CA INDEX NAME)



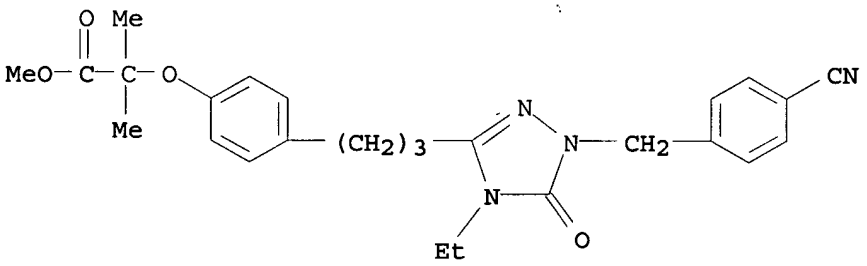
IT **425673-15-0P 425673-16-1P 425673-61-6P 425673-63-8P 425673-87-6P 425673-90-1P 425674-01-7P**
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(intermediate; preparation of (phenylalkyl)triazolones as PPARα

agonists for treatment of cardiovascular disease associated with Syndrome X and related conditions)

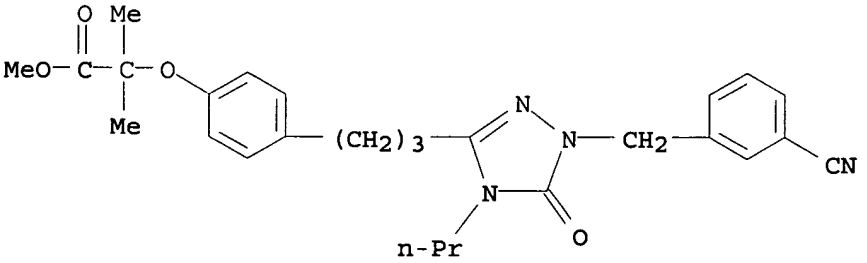
RN 425673-15-0 HCAPLUS
CN Propanoic acid, 2-[4-[3-[1-[(3-cyanophenyl)methyl]-4-ethyl-4,5-dihydro-5-oxo-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-2-methyl-, methyl ester (9CI) (CA INDEX NAME)



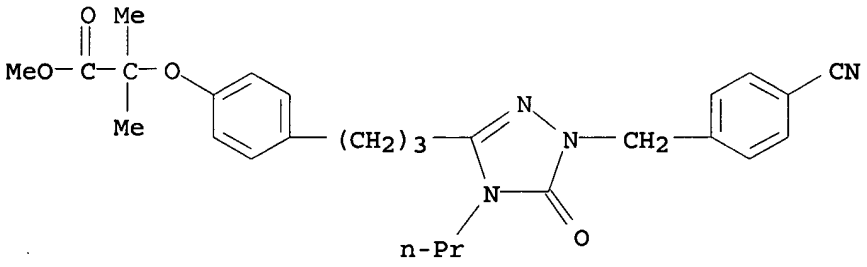
RN 425673-16-1 HCAPLUS
CN Propanoic acid, 2-[4-[3-[1-[(4-cyanophenyl)methyl]-4-ethyl-4,5-dihydro-5-oxo-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-2-methyl-, methyl ester (9CI) (CA INDEX NAME)



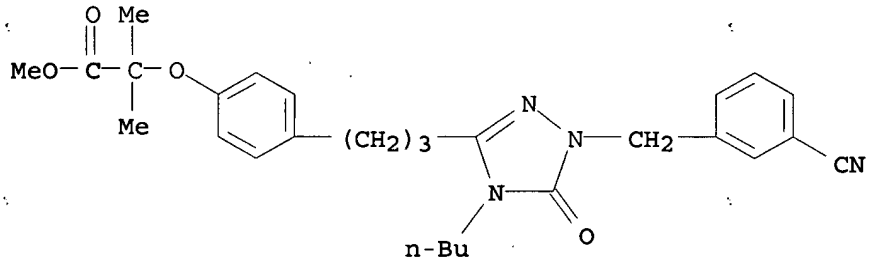
RN 425673-61-6 HCAPLUS
CN Propanoic acid, 2-[4-[3-[1-[(3-cyanophenyl)methyl]-4,5-dihydro-5-oxo-4-propyl-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-2-methyl-, methyl ester (9CI) (CA INDEX NAME)



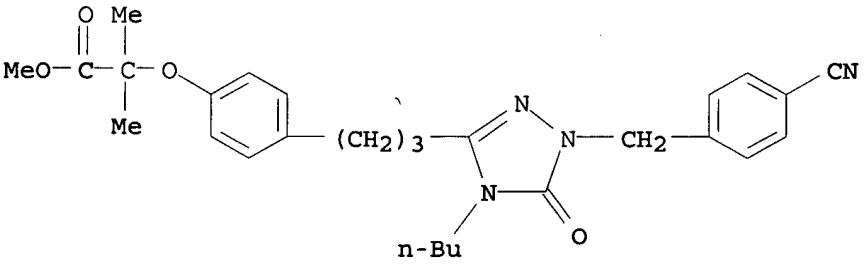
RN 425673-63-8 HCAPLUS
CN Propanoic acid, 2-[4-[3-[1-[(4-cyanophenyl)methyl]-4,5-dihydro-5-oxo-4-propyl-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-2-methyl-, methyl ester (9CI) (CA INDEX NAME)



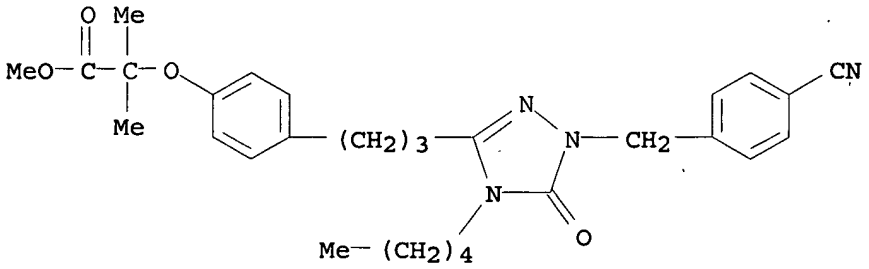
RN 425673-87-6 HCAPLUS
CN Propanoic acid, 2-[4-[3-[4-butyl-1-[(3-cyanophenyl)methyl]-4,5-dihydro-5-oxo-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-2-methyl-, methyl ester (9CI) (CA INDEX NAME)



RN 425673-90-1 HCAPLUS
CN Propanoic acid, 2-[4-[3-[4-butyl-1-[(4-cyanophenyl)methyl]-4,5-dihydro-5-oxo-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-2-methyl-, methyl ester (9CI) (CA INDEX NAME)



RN 425674-01-7 HCAPLUS
CN Propanoic acid, 2-[4-[3-[1-[(4-cyanophenyl)methyl]-4,5-dihydro-5-oxo-4-pentyl-1H-1,2,4-triazol-3-yl]propyl]phenoxy]-2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L84 ANSWER 5 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 2000:401964 HCAPLUS
DN 133:55325
TI Inhibitors of prenyl-protein transferase and their therapeutic use
IN De Solms, S. Jane; Graham, Samuel L.; Shaw, Anthony W.; Ciccarone, Terrence M.; Stokker, Gerald E.
PA Merck & Co., Inc., USA
SO PCT Int. Appl., 281 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000034437	A2	20000615	WO 1999-US29075	19991207
	WO 2000034437	A3	20001116		
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	AU 2000024774	A1	20000626	AU 2000-24774	19991207
	US 6284755	B1	20010904	US 1999-456153	19991207
	US 2002037888	A1	20020328	US 2001-819522	20010328
PRAI	US 1998-111416P	P	19981208		
	US 1999-129282P	P	19990414		
	US 1999-456153	A3	19991207		
	WO 1999-US29075	W	19991207		

OS MARPAT 133:55325
AB The present invention is directed to compds. which inhibit prenyl-protein transferase (FTase) and the prenylation of the oncogene protein Ras. The invention is further directed to chemotherapeutic compns. containing the compds. of this invention and methods for inhibiting prenyl-protein transferase and the prenylation of the oncogene protein Ras. Thus, a large number of inhibitors, such as 4-imidazol-1-ylmethyl-2-[2-(2-oxopiperidin-1-yl)phenoxy]benzonitrile, were synthesized and tested for inhibition of ras farnesyl transferase in vitro. These compds. had IC50's of ≤30 μM.
IC ICM C12N
CC 7-3 (Enzymes)
Section cross-reference(s): 1
ST prenyl protein transferase inhibitor synthesis chemotherapy

IT Blindness
(caused by retinal vascularization; inhibitors of prenyl-protein transferase and their therapeutic use)
IT Hepatitis delta virus
(infections of; inhibitors of prenyl-protein transferase and their therapeutic use)
IT Antitumor agents
(inhibitors of prenyl-protein transferase and their therapeutic use)
IT Disease, animal
(neurofibromen benign proliferative disorder; inhibitors of prenyl-protein transferase and their therapeutic use)
IT Kidney, disease
(polycystic; inhibitors of prenyl-protein transferase and their therapeutic use)
IT Artery, disease
(restenosis; inhibitors of prenyl-protein transferase and their therapeutic use)
IT Eye
(retina, vascularization, blindness caused by; inhibitors of prenyl-protein transferase and their therapeutic use)
IT 198625-84-2 262363-29-1
RL: PRP (Properties)
(Unclaimed; inhibitors of prenyl-protein transferase and their therapeutic use)
IT 275805-76-0P 275805-77-1P 275805-78-2P 275805-79-3P 275805-80-6P
275805-81-7P 275805-82-8P 275805-83-9P 275805-84-0P 275805-85-1P
275805-87-3P 275805-88-4P 275805-89-5P 275805-90-8P 275805-91-9P
275805-92-0P 275805-93-1P 275805-94-2P 275805-95-3P
275805-96-4P 275805-97-5P 275805-98-6P 275805-99-7P 275806-00-3P
275806-01-4P 275806-02-5P 275806-03-6P 275806-04-7P 275806-05-8P
275806-06-9P 275806-07-0P 275806-08-1P 275806-09-2P 275806-10-5P
275806-11-6P 275806-12-7P 275806-13-8P 275806-14-9P 275806-15-0P
275806-16-1P 275806-17-2P 275806-18-3P 275806-19-4P 275806-20-7P
275806-21-8P 275806-22-9P 275806-23-0P 275806-24-1P 275806-25-2P
275806-26-3P 275806-27-4P 275806-29-6P 275806-30-9P 275806-31-0P
275806-32-1P 275806-33-2P 275806-34-3P 275806-35-4P 275806-36-5P
275806-37-6P 275806-38-7P 275806-39-8P 275806-40-1P 275806-41-2P
275806-42-3P 275806-43-4P 275806-44-5P 275806-45-6P 275806-46-7P
275806-47-8P 275806-48-9P 275806-49-0P 275806-50-3P 275806-51-4P
275806-52-5P 275806-53-6P 275806-54-7P 275806-55-8P 275806-56-9P
275806-57-0P 275806-58-1P 275806-59-2P 275806-60-5P 275806-61-6P
275806-62-7P 275806-63-8P 275806-64-9P 275806-65-0P 275806-66-1P
275806-67-2P 275806-68-3P 275806-69-4P 275806-70-7P 275806-71-8P
275806-72-9P 275806-73-0P 275806-74-1P 275806-75-2P 275806-76-3P
275806-77-4P 275806-78-5P 275806-79-6P 275806-80-9P 275806-82-1P
275806-83-2P 275806-84-3P 275806-85-4P 275806-86-5P 275806-87-6P
275806-88-7P 275806-89-8P 275806-90-1P 275806-91-2P 275806-92-3P
275806-93-4P 275806-94-5P 275806-95-6P 275806-96-7P 275806-97-8P
275806-98-9P 275806-99-0P 275807-00-6P 275807-01-7P 275807-02-8P
275807-03-9P 275807-04-0P 275807-05-1P 275807-06-2P 275807-07-3P
275807-08-4P 275807-09-5P 275807-10-8P 275807-11-9P 275807-12-0P
275807-13-1P 275807-14-2P 275807-15-3P 275807-16-4P 275807-17-5P
275807-18-6P 275807-19-7P 275807-20-0P 275807-21-1P 275807-22-2P
275807-23-3P 275807-24-4P 275807-25-5P 275807-26-6P 275807-27-7P
275807-28-8P 275807-29-9P 275807-30-2P 275807-31-3P 275807-32-4P
275807-33-5P 275807-34-6P 275807-35-7P 275807-36-8P 275807-37-9P
275807-38-0P 275807-39-1P 275807-40-4P 275807-41-5P 275807-42-6P
275807-43-7P 275807-44-8P 275807-45-9P 275807-46-0P 275807-47-1P
275807-48-2P 275807-49-3P 275807-50-6P 275807-51-7P 275807-53-9P
275807-54-0P 275807-55-1P 275807-56-2P 275807-57-3P 275807-58-4P

275807-59-5P 275807-60-8P 275807-61-9P 275807-62-0P 275807-63-1P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(inhibitors of prenyl-protein transferase and their therapeutic use)

IT 131384-38-8, Farnesyl protein transferase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitors of prenyl-protein transferase and their therapeutic use)

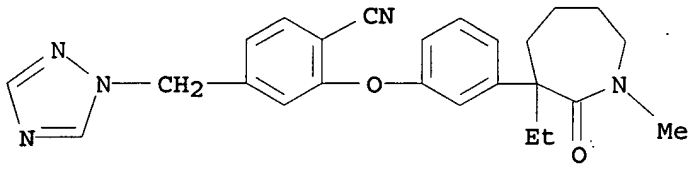
IT 51-45-6, Histamine, reactions 75-77-4, reactions 95-55-6, 2-Aminophenol 95-92-1, Diethyl oxalate 105-60-2, reactions 106-95-6, Allyl bromide, reactions 109-04-6, 2-Bromopyridine 109-83-1, N-Methylaminoethanol 110-91-8, Morpholine, reactions 288-32-4, Imidazole, reactions 452-74-4, 4-Bromo-3-fluorotoluene 592-55-2 625-92-3, 3,5-Dibromopyridine 626-55-1, 3-Bromopyridine 762-72-1 766-51-8, 2-Chloroanisole 1005-56-7, Phenyl thionochloroformate 1609-86-5, tert-Butyl isocyanate 2398-37-0, 3-Bromoanisole 2556-73-2, N-Methylcaprolactam 4509-90-4, 5-Bromovaleryl chloride 5470-11-1, Hydroxylamine hydrochloride 10130-74-2, 3-Methoxybenzenesulfonyl chloride 24424-99-5 30525-89-4, Paraformaldehyde 51721-15-4 71556-74-6 77801-57-1 87199-16-4, 3-Formylphenylboronic acid 96797-15-8, 4-Iodo-1-trityl-1H-imidazole 275808-59-8 275808-60-1 275808-61-2 275808-62-3 275808-64-5 275808-66-7 275808-68-9 275808-70-3 275808-72-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(inhibitors of prenyl-protein transferase and their therapeutic use)

IT 3553-94-4P 7624-61-5P 15547-89-4P 27180-90-1P 59263-75-1P 62467-43-0P 67935-17-5P 71556-71-3P 71556-81-5P 71556-83-7P 71592-43-3P 71592-44-4P 76778-37-5P 101048-76-4P 133059-43-5P 153556-42-4P 173681-63-5P 177273-35-7P 222978-01-0P 222978-02-1P 222978-03-2P 222978-04-3P 222978-20-3P 222978-21-4P 222978-22-5P 222978-23-6P 222978-24-7P 222978-25-8P 222978-26-9P 222978-28-1P 222978-29-2P 254451-36-0P 275807-65-3P 275807-66-4P 275807-67-5P 275807-68-6P 275807-69-7P 275807-70-0P 275807-71-1P 275807-72-2P 275807-73-3P 275807-74-4P 275807-75-5P 275807-76-6P 275807-77-7P 275807-78-8P 275807-79-9P 275807-80-2P 275807-81-3P 275807-82-4P 275807-83-5P 275807-84-6P 275807-85-7P 275807-86-8P 275807-87-9P 275807-88-0P 275807-89-1P 275807-90-4P 275807-91-5P 275807-92-6P 275807-93-7P 275807-94-8P 275807-95-9P 275807-96-0P 275807-97-1P 275807-98-2P 275807-99-3P 275808-00-9P 275808-02-1P 275808-04-3P 275808-06-5P 275808-07-6P 275808-08-7P 275808-09-8P 275808-10-1P 275808-11-2P 275808-13-4P 275808-14-5P 275808-16-7P 275808-17-8P 275808-19-0P 275808-20-3P 275808-21-4P 275808-24-7P 275808-25-8P 275808-27-0P 275808-30-5P 275808-32-7P 275808-34-9P 275808-35-0P 275808-36-1P 275808-37-2P 275808-38-3P 275808-39-4P 275808-41-8P 275808-43-0P 275808-44-1P 275808-45-2P 275808-46-3P 275808-48-5P 275808-50-9P 275808-53-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(inhibitors of prenyl-protein transferase and their therapeutic use)

IT 262946-56-5 262946-57-6 262946-58-7 262946-59-8 262946-60-1 262946-61-2 262946-62-3 262946-63-4 262946-64-5 262946-65-6 262946-66-7 262946-67-8 262946-68-9 262946-69-0 262946-70-3 262946-71-4 262946-72-5 262946-73-6 262946-74-7
RL: PRP (Properties)
(unclaimed nucleotide sequence; inhibitors of prenyl-protein transferase and their therapeutic use)

IT **275805-92-0P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)

(inhibitors of prenyl-protein transferase and their therapeutic use)
RN 275805-92-0 HCAPLUS
CN Benzonitrile, 2-[3-(3-ethylhexahydro-1-methyl-2-oxo-1H-azepin-3-yl)phenoxy]-4-(1H-1,2,4-triazol-1-ylmethyl)- (9CI) (CA INDEX NAME)



L84 ANSWER 6 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1999:249082 HCAPLUS
DN 130:282071
TI Preparation of prenyl-protein transferase inhibitors
IN Desolms, S. Jane; Hutchinson, John H.; Shaw, Anthony W.; Graham, Samuel L.; Ciccarone, Terrence M.
PA Merck & Co., Inc., USA
SO PCT Int. Appl., 202 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9917777	A1	19990415	WO 1998-US21063	19981007
	W: AL, AM, AU, AZ, BA, BB, BG, BR, BY, CA, CN, CU, CZ, EE, GD, GE, HR, HU, ID, IL, IS, JP, KG, KR, KZ, LC, LK, LR, LT, LV, MD, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, SL, TJ, TM, TR, TT, UA, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 6297239	B1	20011002	US 1998-167180	19981006
	CA 2306746	A1	19990415	CA 1998-2306746	19981007
	AU 9897883	A	19990427	AU 1998-97883	19981007
	AU 741945	B2	20011213		
	EP 1021188	A1	20000726	EP 1998-952110	19981007
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, SI, LT, LV, FI, RO				
	JP 2001518508	T	20011016	JP 2000-514648	19981007
PRAI	US 1997-62660P	P	19971008		
	WO 1998-US21063	W	19981007		

OS MARPAT 130:282071
AB R4A4Z4ZA1Z1A2Z2XZ3A3Z5R5 [I; A1-A3 = bond, O, CO, CH:CH, (alkyl)imino, etc.; A4 = bond, CO, C(:CH2), etc.; R4 = H, (un)substituted heterocyclyl, -aryl; R5 = cycloalkyl, heterocyclyl, aryl, etc.; X = bond, (un)substituted cycloalkylene, -arylene, -heterocyclylene; Z = (un)substituted C6H4; Z1-Z4 = bond or (un)substituted alkylene; A1Z1A2Z2XZ3A3Z5 ≠ bond] were prepared Thus, Ph 4-amino-2-hydroxybenzoate was converted in 5 steps to R4CH2ZOCH2C6H4(Ph)-4 (II; Z = 4-cyano-1,2-phenylene)(III; R4 = OSO2Me) which was **condensed** with imidazole to give III (R4 = 1-imidazolyl). Data for biol. activity of I were given.
IC ICM A61K031-535
ICS A61K031-44; A61K031-415; C07D413-00; C07D401-00; C07D417-00;

C07D419-00; C07D233-66
CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1
ST prenyl protein transferase inhibitor prepn
IT Antitumor agents
Prenylation
(preparation of prenyl-protein transferase inhibitors)
IT 222975-78-2P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(Preparation of prenyl-protein transferase inhibitors)
IT 222978-32-7P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation of prenyl-protein transferase inhibitors)
IT 222975-79-3P 222975-80-6P 222975-81-7P 222975-82-8P 222975-83-9P
222975-85-1P 222975-86-2P 222975-87-3P 222975-88-4P 222975-89-5P
222975-90-8P 222975-91-9P 222975-92-0P 222975-93-1P 222975-94-2P
222975-95-3P **222975-96-4P** 222975-97-5P 222975-98-6P
222975-99-7P 222976-00-3P 222976-01-4P 222976-02-5P 222976-03-6P
222976-04-7P 222976-05-8P 222976-07-0P 222976-09-2P 222976-11-6P
222976-13-8P 222976-14-9P 222976-16-1P 222976-19-4P 222976-20-7P
222976-22-9P 222976-24-1P 222976-26-3P 222976-28-5P 222976-30-9P
222976-32-1P 222976-34-3P 222976-36-5P 222976-38-7P 222976-40-1P
222976-42-3P 222976-44-5P 222976-46-7P 222976-47-8P 222976-49-0P
222976-51-4P 222976-53-6P 222976-55-8P 222976-57-0P 222976-58-1P
222976-60-5P 222976-61-6P 222976-63-8P 222976-65-0P 222976-66-1P
222976-67-2P 222976-68-3P 222976-69-4P 222976-70-7P 222976-71-8P
222976-72-9P 222976-73-0P 222976-74-1P 222976-75-2P 222976-77-4P
222976-79-6P 222976-81-0P 222976-83-2P 222976-84-3P 222976-86-5P
222976-88-7P 222976-89-8P 222976-90-1P 222976-91-2P 222976-92-3P
222976-93-4P 222976-94-5P 222976-95-6P 222976-96-7P 222976-97-8P
222976-98-9P 222976-99-0P 222977-00-6P 222977-01-7P 222977-02-8P
222977-03-9P 222977-04-0P 222977-05-1P 222977-06-2P 222977-07-3P
222977-08-4P 222977-09-5P 222977-10-8P 222977-11-9P 222977-12-0P
222977-13-1P 222977-14-2P 222977-15-3P 222977-16-4P 222977-17-5P
222977-18-6P 222977-19-7P 222977-20-0P 222977-21-1P 222977-22-2P
222977-23-3P 222977-24-4P 222977-25-5P 222977-26-6P 222977-27-7P
222977-28-8P 222977-29-9P 222977-30-2P 222977-31-3P 222977-32-4P
222977-33-5P 222977-34-6P 222977-35-7P 222977-36-8P 222977-37-9P
222977-38-0P 222977-40-4P 222977-41-5P 222977-42-6P 222977-43-7P
222977-44-8P 222977-45-9P 222977-46-0P 222977-47-1P 222977-48-2P
222977-49-3P 222977-50-6P 222977-51-7P 222977-52-8P 222977-53-9P
222977-54-0P 222977-55-1P 222977-56-2P 222977-57-3P 222977-58-4P
222977-59-5P 222977-60-8P **222977-61-9P** 222977-62-0P
222977-63-1P 222977-64-2P 222977-65-3P 222977-66-4P 222977-67-5P
222977-68-6P 222977-69-7P 222977-70-0P 222977-71-1P 222977-72-2P
222977-73-3P 222977-74-4P 222977-75-5P 222977-76-6P 222977-77-7P
222977-78-8P 222977-79-9P 222977-80-2P 222977-81-3P 222977-82-4P
222977-83-5P 222977-84-6P 222977-85-7P 222977-86-8P 222977-87-9P
222977-88-0P 222977-89-1P 222978-33-8P 222978-34-9P 222978-35-0P
222978-36-1P 222978-37-2P 222978-38-3P 222978-39-4P 222978-40-7P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(preparation of prenyl-protein transferase inhibitors)
IT 95-57-8, 2-Chlorophenol 108-42-9, 3-Chloroaniline 108-43-0,

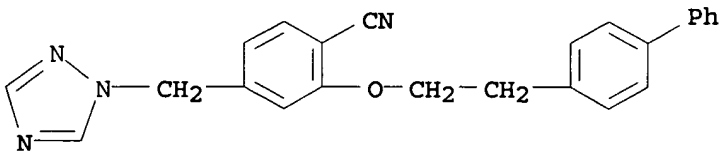
3-Chlorophenol 133-11-9, Phenyl 4-amino-2-hydroxybenzoate 135-19-3, 2-Naphthol, reactions 142-08-5, 2(1H)-Pyridinone 288-32-4, Imidazole, reactions 452-74-4, 4-Bromo-3-fluorotoluene 529-28-2, 2-Iodoanisole 873-77-8, 4-Chlorophenylmagnesium bromide 1122-41-4, 2,4-Dichlorothiophenol 1875-88-3, 2-(4-Chlorophenyl)ethanol 2185-03-7, L-Homoserine lactone hydrochloride 2374-03-0, 4-Amino-3-hydroxybenzoic acid 3510-66-5, 2-Bromo-5-methylpyridine 4214-79-3, 5-Chloro-2-pyridinol 5150-42-5, 2,3-Dimethoxyphenol 5292-21-7, Cyclohexaneacetic acid 14704-31-5 18113-03-6, 2-Chloro-4-methoxyphenol 32316-92-0, 2-Naphthylboronic acid 32673-41-9, Imidazole-4-methanol hydrochloride 51721-15-4, Nγ-Pivaloyloxymethyl-Nα-phthaloylhistamine 72762-00-6, 2-Pyridinol 73373-17-8 96797-15-8, 4-Iodo-1-trityl-1H-imidazole 178685-10-4, 4-(2-Iodoethyl)-1,1'-biphenyl
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of prenyl-protein transferase inhibitors)

IT 6520-87-2P, Methyl 4-cyano-3-hydroxybenzoate 33769-07-2P 40856-59-5P 63435-16-5P, Methyl 4-amino-3-hydroxybenzoate 101048-76-4P, 2-Fluoro-4-formylbenzonitrile 133059-43-5P, 4-Bromo-3-fluorobenzaldehyde 153556-42-4P, 4-Bromo-3-fluorobenzoic acid 157942-12-6P, Methyl 3-hydroxy-4-iodobenzoate 183500-34-7P 183500-42-7P 183500-44-9P 210037-29-9P 210037-30-2P 210037-55-1P, 2-Hydroxy-4-hydroxymethylbenzonitrile 210037-56-2P, 4-Bromomethyl-2-hydroxybenzonitrile 210037-57-3P 222977-90-4P 222977-91-5P 222977-92-6P 222977-93-7P 222977-94-8P, Phenyl 4-cyano-2-hydroxybenzoate 222977-95-9P 222977-96-0P 222977-97-1P 222977-98-2P 222977-99-3P 222978-00-9P 222978-01-0P, 4-Bromo-3-fluorobenzenemethanol 222978-02-1P, 2-Fluoro-4-hydroxymethylbenzonitrile 222978-03-2P, 4-Bromomethyl-2-fluorobenzonitrile 222978-04-3P 222978-05-4P 222978-06-5P 222978-07-6P 222978-08-7P 222978-09-8P 222978-10-1P 222978-11-2P 222978-12-3P 222978-13-4P 222978-14-5P 222978-15-6P 222978-16-7P 222978-17-8P 222978-18-9P 222978-19-0P 222978-20-3P 222978-21-4P 222978-22-5P 222978-23-6P 222978-24-7P 222978-25-8P 222978-26-9P 222978-27-0P 222978-28-1P 222978-29-2P 222978-30-5P 222978-31-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of prenyl-protein transferase inhibitors)

IT **222975-96-4P 222977-61-9P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(preparation of prenyl-protein transferase inhibitors)

RN 222975-96-4 HCAPLUS

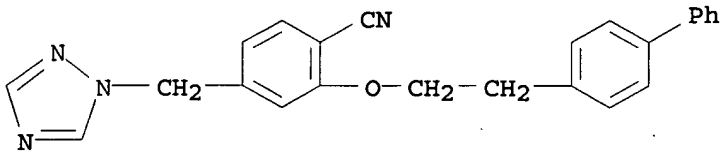
CN Benzonitrile, 2-(2-[1,1'-biphenyl]-4-ylethoxy)-4-(1H-1,2,4-triazol-1-ylmethyl)-, monohydrochloride (9CI) (CA INDEX NAME)



● HCl

RN 222977-61-9 HCAPLUS

CN Benzonitrile, 2-(2-[1,1'-biphenyl]-4-ylethoxy)-4-(1H-1,2,4-triazol-1-ylmethyl)- (9CI) (CA INDEX NAME)



RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

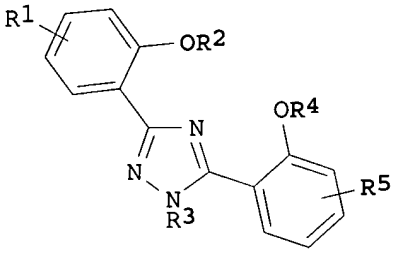
L84 ANSWER 7 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1998:42274 HCAPLUS
DN 128:114953
TI Preparation of substituted 3,5-diphenyl-1,2,4-triazoles as pharmaceutical metal chelators.
IN Lattmann, Rene; Acklin, Pierre
PA Novartis A-G., Switz.
SO PCT Int. Appl., 43 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9749395	A1	19971231	WO 1997-EP3315	19970624
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU				
	RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	TW 533205	B	20030521	TW 1997-86108750	19970623
	CA 2255951	A1	19971231	CA 1997-2255951	19970624
	CA 2255951	C	20061010		
	AU 9732629	A	19980114	AU 1997-32629	19970624
	AU 718037	B2	20000406		
	EP 914118	A1	19990512	EP 1997-928269	19970624
	EP 914118	B1	20021023		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	CN 1223579	A	19990721	CN 1997-195831	19970624
	BR 9709973	A	19990810	BR 1997-9973	19970624
	HU 9903111	A2	20000128	HU 1999-3111	19970624
	NZ 333308	A	20000526	NZ 1997-333308	19970624
	JP 2000507601	T	20000620	JP 1998-502348	19970624
	JP 3541042	B2	20040707		
	AT 226435	T	20021115	AT 1997-928269	19970624
	AP 1127	A	20021206	AP 1998-1407	19970624
	W: GH, KE, SZ, ZW				
	PT 914118	T	20030228	PT 1997-928269	19970624
	CZ 291470	B6	20030312	CZ 1998-4272	19970624
	ES 2187785	T3	20030616	ES 1997-928269	19970624
	RU 2208010	C2	20030710	RU 1999-101050	19970624

	SK 284319	B6	20050103	SK 1998-1785	19970624
	BG 64248	B1	20040730	BG 1998-103003	19981208
	NO 9806024	A	19981221	NO 1998-6024	19981221
	NO 317180	B1	20040906		
	KR 2000022222	A	20000425	KR 1998-710642	19981224
	HK 1020530	A1	20030613	HK 1999-105147	19991109
	US 6465504	B1	20021015	US 2000-699765	20001030
	US 2003069273	A1	20030410	US 2002-252899	20020923
	US 6596750	B2	20030722		
	US 2003203954	A1	20031030	US 2003-447922	20030529
	US 6723742	B2	20040420		
PRAI	CH 1996-1593	A	19960625		
	WO 1997-EP3315	W	19970624		
	US 1998-202769	B2	19981221		
	US 2000-699765	A3	20001030		
	US 2002-252899	A3	20020923		

OS MARPAT 128:114953

GI



I

AB Title compds. [I; R1, R5 = H, halo, OH, alkyl, haloalkyl, alkoxy, haloalkoxy, CO2H, carbamoyl, alkylcarbamoyl, dialkylcarbamoyl, cyano; R2, R4 = H, (substituted) alkanoyl, aroyl, residue removable under physiol. conditions; R3 = H, alkyl, hydroxyalkyl, haloalkyl, carboxyalkyl, alkoxycarbonylalkyl, (substituted) carbamoyl, aryl, aralkyl, heteroaryl, heteroarylalkyl], were prepared for treatment of diseases involving excess iron (no data). Thus, salicyloyl chloride and salicylamide were mixed and heated at 170° to give 2-(2-hydroxyphenyl)benz[e][1,3]oxazin-4-one. The latter was refluxed with 2-hydroxyethylhydrazine in MeOH to give 3,5-bis(2-hydroxyphenyl)-1-(2-hydroxyethyl)-1H-1,2,4-triazole.

IC ICM A61K031-41
ICS C07D249-08; C07D401-06

CC 28-10 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1

ST phenyltriazole prepn medical chelator; triazole diphenyl prepn medical chelator; iron excess treatment diphenyltriazole medical chelator

IT Chelating agents
(medical; preparation of substituted 3,5-diphenyl-1,2,4-triazoles as pharmaceutical metal chelators)

IT 7439-89-6, Iron, biological studies
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(medical chelating agents for iron; preparation of substituted 3,5-diphenyl-1,2,4-triazoles as pharmaceutical metal chelators)

IT 201530-34-9P 201530-36-1P 201530-38-3P 201530-40-7P 201530-41-8P
201530-43-0P 201530-44-1P 201530-45-2P 201530-46-3P 201530-47-4P
201530-48-5P 201530-49-6P 201530-50-9P 201530-51-0P
201530-52-1P 201530-53-2P 201530-54-3P 201530-55-4P 201530-56-5P
201530-57-6P 201530-58-7P 201530-59-8P 201530-60-1P 201530-61-2P

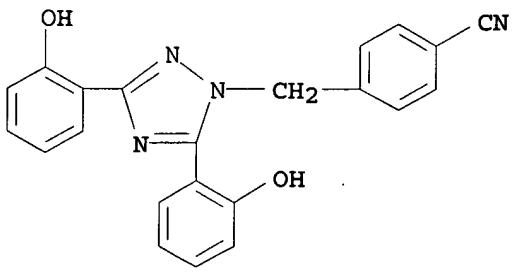
201530-62-3P 201530-63-4P 201530-64-5P 201530-65-6P 201530-66-7P
201530-67-8P 201530-68-9P 201530-69-0P 201530-70-3P 201530-71-4P
201530-72-5P 201530-73-6P 201530-74-7P 201530-75-8P 201530-76-9P
201530-77-0P 201530-78-1P 201530-79-2P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(preparation of substituted 3,5-diphenyl-1,2,4-triazoles as pharmaceutical metal chelators)

IT 65-45-2, Salicylamide 103-67-3, N-Methylbenzylamine 109-01-3, 1-Methylpiperazine 109-83-1, N-Methylethanolamine 109-84-2, 2-Hydroxyethylhydrazine 109-85-3, 2-Methoxyethylamine 110-91-8, Morpholine, reactions 111-42-2, reactions 141-43-5, reactions 321-14-2 345-16-4, 5-Fluorosalicylic acid 534-03-2, 2-Amino-1,3-propanediol 616-30-8, 3-Amino-1,2-propanediol 619-67-0, 4-Hydrazinobenzoic acid 870-46-2, tert-Butyl carbazate 929-06-6, 2-(2-Aminoethoxy)ethanol 934-98-5 1441-87-8, Salicyloyl chloride 2038-03-1, 4-(2-Aminoethyl)morpholine 3197-06-6 5042-30-8, 2,2,2-Trifluoroethylhydrazine 5326-27-2, 2-Hydrazinobenzoic acid 6945-92-2, Ethyl hydrazinoacetate hydrochloride 7120-43-6 19501-58-7, 4-Methoxyphenylhydrazine hydrochloride 24798-62-7 26189-59-3 40594-29-4, 2,4-Difluorophenylhydrazine hydrochloride 51980-54-2, 4-Pyrrolidinobenzaldehyde 56413-74-2, 4-Nitrophenylhydrazine hydrochloride 56874-97-6, 5-Fluorosalicylamide 57616-01-0 89598-56-1 201530-83-8, 4-Cyanobenzylhydrazine hydrochloride 201530-84-9 201530-85-0 201530-86-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of substituted 3,5-diphenyl-1,2,4-triazoles as pharmaceutical metal chelators)

IT 1218-69-5P 201530-80-5P 201530-81-6P 201530-82-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of substituted 3,5-diphenyl-1,2,4-triazoles as pharmaceutical metal chelators)

IT **201530-48-5P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(preparation of substituted 3,5-diphenyl-1,2,4-triazoles as pharmaceutical metal chelators)

RN 201530-48-5 HCAPLUS
CN Benzonitrile, 4-[[3,5-bis(2-hydroxyphenyl)-1H-1,2,4-triazol-1-yl]methyl]- (9CI) (CA INDEX NAME)



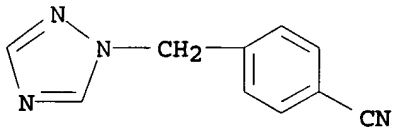
L84 ANSWER 8 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1991:247288 HCAPLUS

DN 114:247288
TI Preparation of cycloalkyleneazoles as aromatase inhibitors
IN Bohlmann, Rolf; Strehlke, Peter; Henderson, David; Schneider, Martin; Nishino, Yukishige
PA Schering A.-G., Germany
SO Eur. Pat. Appl., 19 pp.
CODEN: EPXXDW
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 411735	A1	19910206	EP 1990-250201	19900806
	EP 411735	B1	19950517		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	DE 3926365	A1	19910207	DE 1989-3926365	19890804
	DD 296917	A5	19911219	DD 1990-343215	19900802
	CA 2022682	A1	19910205	CA 1990-2022682	19900803
	CA 2022682	C	19970121		
	AU 9060194	A	19910207	AU 1990-60194	19900803
	AU 634266	B2	19930218		
	ZA 9006150	A	19910529	ZA 1990-6150	19900803
	US 5135937	A	19920804	US 1990-563114	19900803
	IL 95279	A	19950330	IL 1990-95279	19900803
	CN 1049157	A	19910213	CN 1990-106813	19900804
	CN 1024345	B	19940427		
	WO 9101975	A1	19910221	WO 1990-DE611	19900806
	W: FI, HU, JP, NO				
	HU 59911	A2	19920728	HU 1992-324	19900806
	HU 217126	B	19991129		
	JP 05501104	T	19930304	JP 1990-510807	19900806
	JP 3207417	B2	20010910		
	ES 2074530	T3	19950916	ES 1990-250201	19900806
	NO 9200432	A	19920203	NO 1992-432	19920203
	NO 301115	B1	19970915		
	US 5280035	A	19940118	US 1992-889331	19920528
	US 5411982	A	19950502	US 1993-153326	19931116
	NO 9604916	A	19920203	NO 1996-4916	19961119
	FI 9700166	A	19970115	FI 1997-166	19970115
PRAI	DE 1989-3926365	A	19890804		
	US 1990-563114	A3	19900803		
	WO 1990-DE611	W	19900806		
	FI 1992-425	A	19920130		
	NO 1992-432	A	19920203		
	US 1992-889331	A3	19920528		

OS CASREACT 114:247288; MARPAT 114:247288
GI For diagram(s), see printed CA Issue.
AB Title compds. [I; W = atoms to complete an alkyl-substituted (poly)carbocyclic ring; X = CH:CH, O, S; Y, Z = CH, N], were prepared Thus, imidazole in DMF was treated with NaH and then 4-bromomethylbenzonitrile to give 4-(1-imidazolylmethyl)benzonitrile. The latter in THF at -50° was treated with LiN(CHMe2)2 in THF and then with cyclohexanone at -60° to give the hydroxycyclohexyl derivative, which was refluxed with SOCl2 to give title compound II. II at 2 mg/kg/day gave 74% inhibition of androstenedione-induced uterine weight gain in rats.
IC ICM C07D233-58
ICS C07D249-08; C07D249-04; C07D409-06; A61K031-41
CC 28-10 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1
ST cycloalkyleneazole prepn aromatase inhibitor; imidazole cycloalkylene

prepn aromatase inhibitor
IT 7333-51-9, Cyclohexyltriphenylphosphonium bromide
RL: RCT (Reactant); RACT (Reactant or reagent)
(Wittig reaction of, with cyanothiophenecarboxaldehyde)
IT 72835-25-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(bromination of, in preparation of cycloalkyleneazole aromatase inhibitor)
IT 9039-48-9, Aromatase
RL: USES (Uses)
(inhibitors, preparation of cycloalkyleneazoles as)
IT 7311-46-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and **condensation** of, with imidazole, in preparation of aromatase inhibitor)
IT 134134-96-6P 134134-97-7P 134134-98-8P 134134-99-9P 134135-00-5P
134135-01-6P 134135-02-7P 134135-03-8P 134135-04-9P 134135-05-0P
134135-06-1P 134135-07-2P 134135-08-3P 134135-09-4P 134135-10-7P
134135-11-8P 134135-12-9P 134135-13-0P 134135-14-1P 134135-15-2P
134135-16-3P 134135-17-4P 134135-18-5P 134135-19-6P 134135-20-9P
134135-21-0P 134135-22-1P 134135-23-2P 134135-24-3P 134135-25-4P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of, as aromatase inhibitor)
IT 134135-40-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as intermediate for aromatase inhibitor)
IT 21512-16-3P 79387-71-6P 84466-87-5P **112809-25-3P**
112809-54-8P 118618-40-9P 134135-26-5P 134135-27-6P 134135-28-7P
134135-29-8P 134135-30-1P 134135-31-2P 134135-32-3P 134135-33-4P
134135-34-5P 134135-35-6P 134135-36-7P 134135-37-8P 134135-38-9P
134135-39-0P 134135-41-4P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation of, as intermediate for cycloalkyleneazole aromatase inhibitor)
IT 108-94-1, Cyclohexanone, reactions 120-92-3, Cyclopentanone 288-32-4, Imidazole, reactions 288-88-0, 1H-1,2,4-Triazole 502-42-1, Cycloheptanone 700-58-3, 2-Adamantanone 1066-54-2, Trimethylsilylacetylene 4701-17-1, 5-Bromothiophene-2-carboxaldehyde 17201-43-3, 4-Bromomethylbenzonitrile
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in preparation of cycloalkyleneazole aromatase inhibitor)
IT **112809-25-3P**
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation of, as intermediate for cycloalkyleneazole aromatase inhibitor)
RN 112809-25-3 HCAPLUS
CN Benzonitrile, 4-(1H-1,2,4-triazol-1-ylmethyl)- (9CI) (CA INDEX NAME)

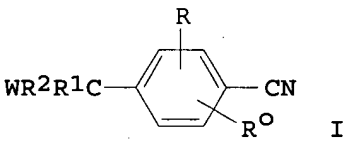


L84 ANSWER 9 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1991:247287 HCAPLUS
DN 114:247287
TI Preparation and formulation of triazolylmethylbenzonitriles and analogs as

aromatase inhibitors
IN Bowman, Robert M.; Steele, Ronald E.; Browne, Leslie
PA Ciba-Geigy Corp., USA
SO U.S., 19 pp. Cont.-in-part of U.S. 4,937,250.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4978672	A	19901218	US 1988-240862	19880906
	US 4749713	A	19880607	US 1986-837489	19860307
	US 4937250	A	19900626	US 1988-164696	19880307
	US 5112845	A	19920512	US 1990-628732	19901217
	US 5352795	A	19941004	US 1992-882188	19920511
	US 5473078	A	19951205	US 1994-275688	19940714
PRAI	US 1986-837489	A3	19860307		
	US 1988-164696	A2	19880307		
	US 1988-240862	A2	19880906		
	US 1990-628732	A3	19901217		
	US 1992-882188	A1	19920511		

OS MARPAT 114:247287
GI



I

AB The title compds. I [R, R° = H, alkyl; or R and R° located on adjacent carbon atoms and together when combined with the benzene ring to which they are attached form a naphthalene or tetrahydronaphthalene ring; R1, R2 = H, alkyl, alkenyl, cycloalkyl, etc.; W = (substituted) 1-imidazolyl, 1-(1,2,4- or 1,3,4)-triazolyl, 3-pyridyl] were prepared A mixture of α-bromo-p-tolunitrile, 1,2,4-triazole, K2CO3, and KI in acetone was stirred for 8 h at 55° to give I [R = R° = R1 = R2 = H; W = 1-(1,2,4-triazolyl)]. Compds. I exhibited IC50 values of 10-7 to 10-9 M against aromatase.

IC ICM A61K031-41
ICS C07D249-08
INCL 514383000
CC 28-10 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1, 63
ST triazolylmethylbenzonitrile prepn aromatase inhibitor
IT Neoplasm inhibitors
((triazolylmethyl)benzonitriles and analogs)
IT Gynecomastia
((triazolylmethyl)benzonitriles effect)
IT Abortion
(by (triazolylmethyl)benzonitriles and analogs)
IT Estrogens
RL: RCT (Reactant); RACT (Reactant or reagent)
(inhibitors of biosynthesis of, (triazolylmethyl)benzonitriles as)
IT Contraceptives
(female, (triazolylmethyl)benzonitriles and analogs)
IT 9039-48-9, Aromatase

RL: USES (Uses)
(inhibitors, triazolylmethylbenzonitriles and analogs as)

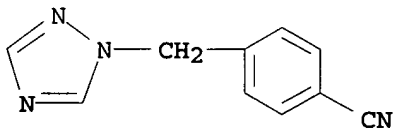
IT 13391-47-4P 42252-33-5P 112808-96-5P 112809-49-1P 112809-50-4P
112809-58-2P 112809-59-3P 112809-60-6P 112809-61-7P 112809-62-8P
112809-63-9P 112809-64-0P 112809-65-1P 112809-69-5P 112809-70-8P
112809-71-9P 112809-73-1P 129696-66-8P 133982-02-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, in preparation of aromatase inhibitor)

IT 112808-94-3P 112808-96-5P 112808-98-7P 112808-99-8P 112809-00-4P
112809-01-5P 112809-03-7P 112809-05-9P 112809-06-0P 112809-07-1P
112809-08-2P 112809-09-3P 112809-11-7P 112809-12-8P 112809-13-9P
112809-14-0P 112809-15-1P 112809-16-2P 112809-17-3P 112809-18-4P
112809-19-5P 112809-20-8P 112809-21-9P 112809-22-0P 112809-23-1P
112809-24-2P **112809-25-3P** **112809-26-4P** 112809-27-5P
112809-28-6P 112809-29-7P 112809-30-0P 112809-31-1P 112809-34-4P
112809-35-5P 112809-36-6P 112809-37-7P 112809-38-8P 112809-39-9P
112809-40-2P 112809-41-3P 112809-42-4P 112809-43-5P 112809-44-6P
112809-45-7P 112809-46-8P 112809-51-5P 112809-52-6P 112809-53-7P
112809-54-8P 112809-55-9P 112809-56-0P 112809-77-5P 112809-78-6P
129696-53-3P 129696-54-4P 129696-59-9P 129696-65-7P 133981-85-8P
133981-86-9P 133981-87-0P 133981-88-1P 133981-89-2P 133981-90-5P
133981-91-6P **133981-92-7P** 133981-93-8P
133981-94-9P 133981-95-0P 133981-96-1P **133981-97-2P**
133981-98-3P 133981-99-4P 133982-00-0P 133982-01-1P
134000-92-3P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(preparation of, as aromatase inhibitor)

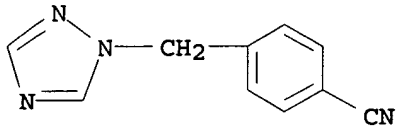
IT 90-96-0 104-88-1, 4-Chlorobenzaldehyde, reactions 288-32-4, Imidazole, reactions 288-88-0, 1H-1,2,4-Triazole 500-22-1, 3-Pyridinecarboxaldehyde 612-12-4 822-36-6, 4-Methylimidazole 874-86-2 1194-02-1, 4-Fluorobenzonitrile 10297-05-9 17201-43-3 42498-38-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in preparation of aromatase inhibitor)

IT **112809-25-3P** **112809-26-4P** **133981-91-6P**
133981-92-7P **133981-94-9P** **133981-97-2P**
134000-92-3P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(preparation of, as aromatase inhibitor)

RN 112809-25-3 HCAPLUS
CN Benzonitrile, 4-(1H-1,2,4-triazol-1-ylmethyl)- (9CI) (CA INDEX NAME)

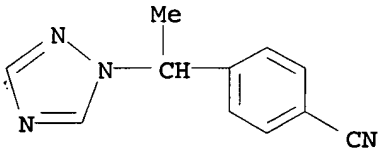


RN 112809-26-4 HCAPLUS
CN Benzonitrile, 4-(1H-1,2,4-triazol-1-ylmethyl)-, monohydrochloride (9CI) (CA INDEX NAME)

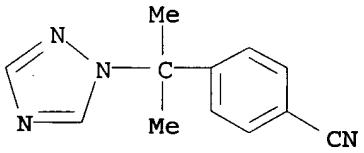


● HCl

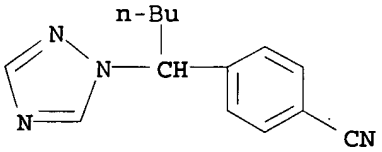
RN 133981-91-6 HCAPLUS
CN Benzonitrile, 4-[1-(1H-1,2,4-triazol-1-yl)ethyl]- (9CI) (CA INDEX NAME)



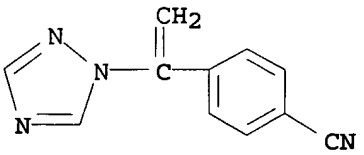
RN 133981-92-7 HCAPLUS
CN Benzonitrile, 4-[1-methyl-1-(1H-1,2,4-triazol-1-yl)ethyl]- (9CI) (CA INDEX NAME)



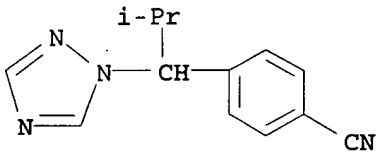
RN 133981-94-9 HCAPLUS
CN Benzonitrile, 4-[1-(1H-1,2,4-triazol-1-yl)pentyl]- (9CI) (CA INDEX NAME)



RN 133981-97-2 HCAPLUS
CN Benzonitrile, 4-[1-(1H-1,2,4-triazol-1-yl)ethenyl]- (9CI) (CA INDEX NAME)



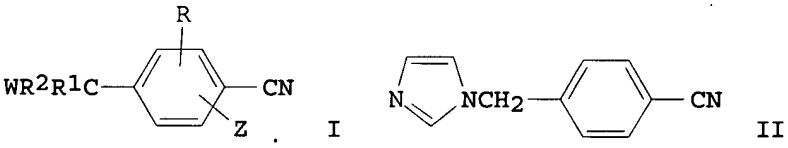
RN 134000-92-3 HCAPLUS
CN Benzonitrile, 4-[2-methyl-1-(1H-1,2,4-triazol-1-yl)propyl]- (9CI) (CA INDEX NAME)



L84 ANSWER 10 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1990:631373 HCAPLUS
DN 113:231373
TI Preparation of (imidazolylmethyl)benzonitriles as aromatase inhibitors
IN Bowman, Robert M.; Steele, Ronald E.; Browne, Leslie J.
PA Ciba-Geigy Corp., USA
SO U.S., 16 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 3

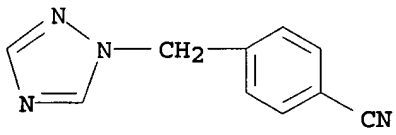
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4937250	A	19900626	US 1988-164696	19880307
	US 4978672	A	19901218	US 1988-240862	19880906
	US 5071861	A	19911210	US 1990-510501	19900418
	US 5112845	A	19920512	US 1990-628732	19901217
	US 5352795	A	19941004	US 1992-882188	19920511
	US 5473078	A	19951205	US 1994-275688	19940714
PRAI	US 1986-837489	A3	19860307		
	US 1988-164696	A2	19880307		
	US 1988-240862	A2	19880906		
	US 1990-628732	A3	19901217		
	US 1992-882188	A1	19920511		

OS MARPAT 113:231373
GI

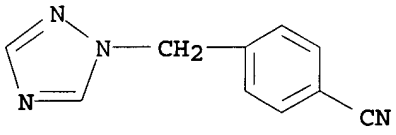


AB The title compds. I [R, Z = H, alkyl; or R and Z on adjacent C atoms and together when combined with the benzene ring to which they are attached form a naphthalene or tetrahydronaphthalene ring; R1 = H; R2 = aryl, arylalkyl, cyloalkyl, etc.; or R1R2 = alkylidene, mono-, diarylalkylidene, alkylene, etc.; W = (substituted) 1-imidazolyl; aryl = (substituted) Ph, 2-, 3-, or 4-pyridyl] were prepared A mixture of α-bromo-4-toluonitrile and imidazole in CH2Cl2 was stirred at room temperature for 15 h to give imidazole derivative II. II in vitro had an IC50 of 10 nM against aromatase.
IC ICM A61K031-415
ICS C07D401-06
INCL 514341000
CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1
ST imidazolylmethylbenzonitrile prepn aromatase inhibitor; benzonitrile

imidazolylmethyl prepn aromatase inhibitor
IT Gynecomastia
((imidazolylmethyl)benzonitriles effect on)
IT Estrogens
RL: RCT (Reactant); RACT (Reactant or reagent)
(inhibitors of biosynthesis of, (imidazolylmethyl)benzonitriles as)
IT Parturition
(disorder, premature, (imidazolylmethyl)benzonitriles effect on)
IT Uterus, disease or disorder
(endometriosis, treatment of, (imidazolylmethyl)benzonitriles for)
IT 9039-48-9, Aromatase
RL: RCT (Reactant); RACT (Reactant or reagent)
(inhibitors of, (imidazolylmethyl)benzonitriles as)
IT 13428-06-3P 42252-33-5P 112809-57-1P 112809-58-2P 112809-59-3P
112809-60-6P 112809-61-7P 112809-62-8P 112809-63-9P 112809-64-0P
112809-65-1P 112809-66-2P 112809-69-5P 129696-66-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, in preparation of aromatase inhibitor)
IT 129696-68-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
IT 112808-94-3P 112808-96-5P 112808-99-8P 112809-00-4P 112809-01-5P
112809-02-6P 112809-03-7P 112809-05-9P 112809-06-0P 112809-07-1P
112809-08-2P 112809-09-3P 112809-10-6P 112809-11-7P 112809-12-8P
112809-13-9P 112809-14-0P 112809-15-1P 112809-16-2P 112809-17-3P
112809-18-4P 112809-19-5P 112809-20-8P 112809-21-9P 112809-22-0P
112809-23-1P 112809-24-2P **112809-25-3P 112809-26-4P**
112809-27-5P 112809-28-6P 112809-29-7P 112809-30-0P 112809-31-1P
112809-31-1P 112809-35-5P 112809-36-6P 112809-37-7P 112809-38-8P
112809-39-9P 112809-42-4P 112809-43-5P 112809-44-6P 112809-46-8P
112809-47-9P 112809-48-0P 112809-49-1P 112809-50-4P 112809-51-5P
112809-52-6P 112809-54-8P 112809-55-9P 112809-56-0P 112809-71-9P
112809-75-3P 112809-77-5P 112809-78-6P 129696-53-3P 129696-54-4P
129696-55-5P 129696-57-7P 129696-58-8P 129696-59-9P 129696-60-2P
129696-61-3P 129696-62-4P 129696-63-5P 129696-64-6P 129696-65-7P
129696-67-9P 129717-95-9P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(preparation of, as aromatase inhibitor)
IT 74-88-4, reactions 79-44-7, N,N-Dimethylcarbamoyl chloride 90-96-0, 4,4'-Dimethoxybenzophenone 104-88-1, 4-Chlorobenzaldehyde, reactions 109-94-4 288-32-4, 1H-Imidazole, reactions 288-88-0, 1H-1,2,4-Triazole 612-12-4, α,α'-Dichloro-o-xylene 822-36-6 882-33-7 1194-02-1, 4-Fluorobenzonitrile 10297-05-9, 1-Chloro-4-iodobutane 17201-43-3 30525-89-4, Paraformaldehyde 42498-38-4 112809-74-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in preparation of aromatase inhibitor)
IT **112809-25-3P 112809-26-4P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(preparation of, as aromatase inhibitor)
RN 112809-25-3 HCAPLUS
CN Benzonitrile, 4-(1H-1,2,4-triazol-1-ylmethyl)- (9CI) (CA INDEX NAME)



RN 112809-26-4 HCAPLUS
CN Benzonitrile, 4-(1H-1,2,4-triazol-1-ylmethyl)-, monohydrochloride (9CI) (CA INDEX NAME)

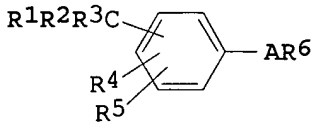


● HCl

L84 ANSWER 11 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1989:407410 HCAPLUS
DN 111:7410
TI Preparation and formulation of (substituted aralkyl) heterocyclic compounds as aromatase inhibitors
IN Edwards, Philip Neil; Large, Michael Stewart
PA Imperial Chemical Industries PLC, UK
SO Eur. Pat. Appl., 32 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 296749	A1	19881228	EP 1988-305429	19880614
	EP 296749	B1	19941026		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	ZA 8803691	A	19890222	ZA 1988-3691	19880524
	IL 86499	A	19970930	IL 1988-86499	19880525
	AU 8816911	A	19881222	AU 1988-16911	19880531
	AU 605872	B2	19910124		
	US 4935437	A	19900619	US 1988-204743	19880610
	ES 2063036	T3	19950101	ES 1988-305429	19880614
	NO 8802628	A	19881219	NO 1988-2628	19880615
	NO 170080	B	19920601		
	NO 170080	C	19920909		
	CA 1337420	C	19951024	CA 1988-569512	19880615
	DK 8803304	A	19881217	DK 1988-3304	19880616
	DK 174573	B1	20030623		
	FI 8802882	A	19881217	FI 1988-2882	19880616
	FI 97804	B	19961115		
	FI 97804	C	19970225		
	JP 01019067	A	19890123	JP 1988-147068	19880616
	US 36617	E	20000314	US 1996-627311	19960403
PRAI	GB 1987-14013	A	19870616		

US 1988-204743 A5 19880610
OS MARPAT 111:7410
GI



I

AB The title compds. [I; R1 = N3, CONH2, cyano, CHO, OH, NO2, 1-hydroxy-C1-6-alkyl, NCCH2CH2, C2-6 alkanoyl, etc.; R2, R3 = H, C1-6 alkyl, halo-C1-6-alkyl, (un)substituted Ph, R2R3 = atoms to complete a 3- to 6-membered ring, etc.; R4 = H, halo, cyano, NO2, C1-6 alkyl, haloalkyl; R5 = MeC(CN)2, F3CSO2, CONH2, pyrrolidinocarbonyl, piperidinocarbonyl, NO2, etc.; A = (un)substituted CH2, CH2CH2, etc.; R6 = 1H-1,2,4-triazol-1-yl, 4H-1,2,4-triazol-1-yl, 1H-imidazol-1-yl, etc.] and their salts, useful as aromatase inhibitors, were prepared 2,2'-(5-Methyl-m-phenylene)bis[2-methylpropionitrile] (preparation given) was brominated with N-bromosuccinimide and the product was was treated with Na triazole to give 2,2'-[5-(1,2,4-triazol-1-ylmethyl)-m-phenylene]bis[2-methylpropionitrile]. I are aromatase inhibitors in vitro at <10 μg/mL, and the preferred I are active at <0.1 μg/mL in vitro and 1.0 mg/kg in vivo, with no toxicity at these doses. Preferred pharmaceutical and veterinary compns. are tablets and capsules containing 0.1-100, preferably 0.25-25 mg I.

IC ICM C07D249-04
ICS C07D233-56; C07D233-90; C07D239-26; C07D213-04; A61K031-41; A61K031-44; A61K031-505

CC 28-10 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1

ST aralkyl heterocycle prepn aromatase inhibitor; neoplasm inhibitor aralkyl heterocycle prepn; triazolylmethylphenylenebispropionitrile prepn aromatase inhibitor

IT Neoplasm inhibitors
(substituted aralkylheterocyclic compds.)

IT 443-88-9, 2-Fluoro-m-xylene
RL: RCT (Reactant); RACT (Reactant or reagent)
(Friedel-Crafts acylation of)

IT 676-58-4, Methylmagnesium chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(Grignard reaction of, with methylpropionitrile derivative)

IT 109-64-8, 1,3-Dibromopropane 110-52-1, 1,4-Dibromobutane 865-50-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkylation by, of propionitrile derivative)

IT 110-89-4, Piperidine, reactions 110-91-8, Morpholine, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(amination by, of triazolylbenzoate)

IT 13730-55-7, Methyl 2,5-dimethylbenzoate 25081-39-4, Methyl 3,5-dimethylbenzoate
RL: RCT (Reactant); RACT (Reactant or reagent)
(bromination of)

IT 626-55-1, 3-Bromopyridine 4595-59-9, 5-Bromopyrimidine
RL: RCT (Reactant); RACT (Reactant or reagent)
(**condensation** of, with propionitrile derivative)

IT 19294-04-3
RL: RCT (Reactant); RACT (Reactant or reagent)

(cyanation of)
IT 9039-48-9, Aromatase
RL: USES (Uses)
(inhibitors, substituted aralkylheterocyclic compds.)
IT 120511-88-8 120512-71-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidation of)
IT 120511-83-3P 120511-89-9P 120512-25-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and Grignard reaction with methylmagnesium chloride)
IT 120512-38-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and alkylation of)
IT 120512-00-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and amination of)
IT 93748-07-3P 120512-51-8P 120512-78-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and bromination of)
IT 120511-88-8P 120512-11-0P 120512-19-8P 120512-66-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and chlorination of)
IT 120512-62-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and conversion of, to cyano derivative)
IT 120512-43-8P 120512-60-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and conversion to propionitrile derivative)
IT 27129-86-8P 120511-79-7P 120512-12-1P 120512-36-9P 120512-52-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and cyanation of)
IT 120512-05-2P 120512-06-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and dehydration of)
IT 120512-17-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and dehydroxylation of)
IT 33016-47-6P 120511-82-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and deprotection of)
IT 120512-59-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and esterification of)
IT 120512-40-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and fluorination of)
IT 120511-93-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and hydrolysis of)

IT 29232-73-3P 39101-54-7P 120511-74-2P 120512-37-0P 120512-45-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and methylation of)

IT 42444-20-2P 120512-13-2P 120512-23-4P 120512-44-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and oxidation of)

IT 82594-80-7P, 4-Methyl-1-tritylimidazole
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and quaternization of)

IT 120512-09-6P 120512-20-1P 120532-02-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of)

IT 120511-72-0P 120511-77-5P 120511-78-6P 120511-80-0P 120511-84-4P
120511-86-6P 120511-90-2P 120511-91-3P 120512-02-9P 120512-03-0P
120512-39-2P 120512-41-6P 120512-46-1P 120512-53-0P 120512-54-1P
120512-61-0P 120512-64-3P 120512-68-7P 120512-69-8P 120512-74-5P
120512-76-7P 120512-80-3P 120532-03-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, in preparation of aromatase inhibitors)

IT 53525-60-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reduction of)

IT 120511-73-1P 120511-75-3P 120511-76-4P 120511-85-5P 120511-87-7P
120511-92-4P 120511-93-5P 120511-94-6P 120511-95-7P 120511-96-8P
120511-97-9P 120511-98-0P 120511-99-1P 120512-01-8P 120512-04-1P
120512-07-4P 120512-08-5P 120512-10-9P 120512-14-3P
120512-15-4P 120512-16-5P 120512-18-7P 120512-21-2P 120512-22-3P
120512-24-5P 120512-26-7P 120512-27-8P 120512-28-9P 120512-29-0P
120512-30-3P 120512-31-4P 120512-32-5P 120512-33-6P 120512-34-7P
120512-35-8P 120512-47-2P 120512-48-3P 120512-49-4P
120512-50-7P 120512-55-2P 120512-56-3P 120512-57-4P
120512-58-5P 120512-63-2P 120512-65-4P 120512-66-5P 120512-67-6P
120512-70-1P 120512-72-3P 120512-73-4P **120512-75-6P**
120512-77-8P 120512-79-0P 120532-00-5P 120532-01-6P 120532-04-9P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(preparation of, as aromatase inhibitor)

IT 120511-81-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(quaternization by, of imidazole derivative)

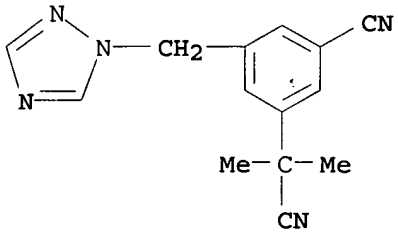
IT 288-32-4, Imidazole, reactions 288-88-0, 1H-1,2,4-Triazole 41253-21-8, Sodium triazole
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in preparation of aromatase inhibitor)

IT 120511-84-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in preparation of aromatase inhibitors)

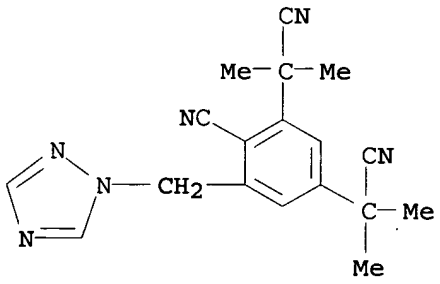
IT 14527-26-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with propionitrile derivative)

IT 120512-42-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(reduction of)

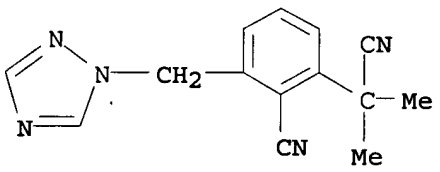
IT 822-36-6, 4-Methylimidazole
RL: RCT (Reactant); RACT (Reactant or reagent)
(tritylation of)
IT 23785-21-9, Ethyl imidazole-4-carboxylate
RL: RCT (Reactant); RACT (Reactant or reagent)
(N-tritylation of)
IT **120512-07-4P 120512-50-7P 120512-75-6P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(preparation of, as aromatase inhibitor)
RN 120512-07-4 HCAPLUS
CN Benzeneacetonitrile, 3-cyano-α,α-dimethyl-5-(1H-1,2,4-triazol-1-ylmethyl)- (9CI) (CA INDEX NAME)



RN 120512-50-7 HCAPLUS
CN 1,3-Benzenediacetonitrile, 4-cyano-α,α,α',α'-tetramethyl-5-(1H-1,2,4-triazol-1-ylmethyl)- (9CI) (CA INDEX NAME)



RN 120512-75-6 HCAPLUS
CN Benzeneacetonitrile, 2-cyano-α,α-dimethyl-3-(1H-1,2,4-triazol-1-ylmethyl)- (9CI) (CA INDEX NAME)

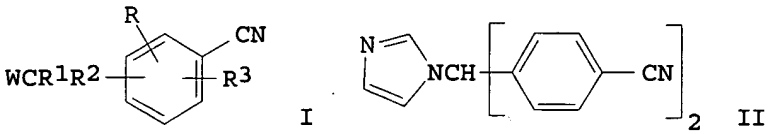


L84 ANSWER 12 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1988:75402 HCAPLUS
DN 108:75402

TI Preparation and testing of α-heterocyclyltolunitriles as aromatase inhibitors
IN Bowman, Robert Mathews; Steele, Ronald Edward; Browne, Leslie Johnston
PA Ciba-Geigy A.-G. , Switz.
SO Eur. Pat. Appl., 27 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 236940	A2	19870916	EP 1987-103099	19870305
	EP 236940	A3	19891018		
	EP 236940	B1	19930922		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	US 4749713	A	19880607	US 1986-837489	19860307
	FI 8700903	A	19870908	FI 1987-903	19870302
	FI 91857	B	19940513		
	FI 91857	C	19940825		
	DD 264432	A5	19890201	DD 1987-300415	19870303
	IL 81746	A	19920216	IL 1987-81746	19870303
	HU 43822	A2	19871228	HU 1987-952	19870305
	HU 202843	B	19910429		
	RO 96133	B3	19890130	RO 1987-127283	19870305
	PL 151490	B1	19900928	PL 1987-264460	19870305
	PL 152025	B1	19901031	PL 1987-280247	19870305
	RO 101533	B1	19920625	RO 1987-134372	19870305
	RO 101532	B1	19921103	RO 1987-134373	19870305
	CA 1316928	C	19930427	CA 1987-531185	19870305
	AT 94873	T	19931015	AT 1987-103099	19870305
	ES 2059317	T3	19941116	ES 1987-103099	19870305
	DK 8701176	A	19870908	DK 1987-1176	19870306
	DK 172190	B1	19971222		
	NO 8700937	A	19870908	NO 1987-937	19870306
	NO 170277	B	19920622		
	NO 170277	C	19920930		
	AU 8769768	A	19870910	AU 1987-69768	19870306
	AU 604011	B2	19901206		
	JP 62212369	A	19870918	JP 1987-50446	19870306
	JP 07055930	B	19950614		
	ZA 8701637	A	19871028	ZA 1987-1637	19870306
	SU 1470184	A3	19890330	SU 1987-4202145	19870306
	CZ 279026	B6	19941116	CZ 1987-1512	19870306
	CZ 279027	B6	19941116	CZ 1987-7367	19870306
	CZ 279028	B6	19941116	CZ 1987-7368	19870306
	SK 279101	B6	19980603	SK 1987-1512	19870306
	SK 279102	B6	19980603	SK 1987-7367	19871012
	SK 279103	B6	19980603	SK 1987-7368	19871012
	SU 1549478	A3	19900307	SU 1988-4203990	19880118
	SU 1577695	A3	19900707	SU 1988-4203999	19880118
PRAI	US 1986-837489	A	19860307		
	EP 1987-103099	A	19870305		

OS CASREACT 108:75402; MARPAT 108:75402
GI



I II

AB The title compds. [I; R, R3 = H, alkyl; adjacent R1R3 = (CH2)4, CH:CHCH:CH; R1, R2 = H, alkenyl, C3-6 cycloalkyl, aryl, R4S, (un)substituted alkyl; R1R2 = (aryl)alkylidene, (alkyl)-C4-6 alkylene, atoms to complete an (un)substituted 5-, 6-, or 7-membered, optionally benzo-fused ring; R4 = alkyl, aryl, aralkyl; W = alkyl-(un)substituted imidazol-1-yl, 1,2,4-triazol-1-yl, 1,2,4-triazol-4-yl, 3-pyridyl] and their pharmaceutically acceptable salts were prepared as aromatase inhibitors, useful in treatment of estrogen-dependent diseases. 4-BrCH2C6H4CN and imidazole were stirred 15 h at room temperature in CH2Cl2 to give 4-(1H-imidazol-1-ylmethyl)benzonitrile. The latter was stirred at 0-5° with Me3COK in DMF while 4-FC6H4CN in DMF was added dropwise to give methylenebis[benzonitrile] II. I inhibited aromatization of androstenedione in human placental microsomes with IC50 ≥ 10-9 M and inhibited or caused regression of mammary tumors in rats at ≥0.1 mg/kg/day orally. Tablets were prepared containing II hemisuccinate 50.00, lactose 2535.00, cornstarch 125.00, polyethylene glycol 150.00, and Mg stearate 40.00 g per 104.

IC ICM C07D233-56
ICS C07D249-08; C07D213-57; C07D401-04; C07D409-04; A61K031-41; A61K031-415; A61K031-44

CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1, 63

ST imidazolylmethylbenzonitrile prepn aromatase inhibitor; estrogen inhibitor imidazolylmethylbenzonitrile prepn; neoplasm inhibitor imidazolylmethylbenzonitrile prepn; breast cancer treatment imidazolylmethylbenzonitrile prepn; benzonitrile imidazolylmethyl prepn aromatase inhibitor

IT Neoplasm inhibitors
((imidazolylmethyl)benzonitriles)

IT Estrogens
RL: USES (Uses)
(inhibitors, (imidazolylmethyl)benzonitriles)

IT Mammary gland
(neoplasm, treatment of, (imidazolylmethyl)benzonitriles for)

IT 9039-48-9, Aromatase
RL: USES (Uses)
(inhibitors, (imidazolylmethyl)benzonitriles)

IT 112809-74-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and **condensation** of, with dimethoxybenzophenone)

IT 112809-67-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and decomposition of)

IT 13428-06-3P 42252-33-5P 112809-54-8P 112809-55-9P 112809-56-0P 112809-57-1P 112809-58-2P 112809-59-3P 112809-60-6P 112809-61-7P 112809-62-8P 112809-63-9P 112809-64-0P 112809-65-1P 112809-66-2P 112809-68-4P 112809-69-5P 112809-70-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, in preparation of aromatase inhibitors)

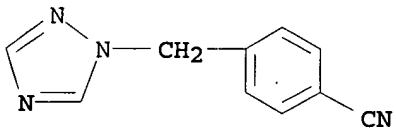
IT 112809-75-3P 112809-76-4P 112809-77-5P 112809-78-6P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of, as aromatase inhibitor)

IT 112808-94-3P 112808-95-4P 112808-96-5P 112808-97-6P 112808-98-7P
112808-99-8P 112809-00-4P 112809-01-5P 112809-02-6P 112809-03-7P
112809-04-8P 112809-05-9P 112809-06-0P 112809-07-1P 112809-08-2P
112809-09-3P 112809-10-6P 112809-11-7P 112809-12-8P 112809-13-9P
112809-14-0P 112809-15-1P 112809-16-2P 112809-17-3P 112809-18-4P
112809-19-5P 112809-20-8P 112809-21-9P 112809-22-0P 112809-23-1P
112809-24-2P **112809-25-3P 112809-26-4P** 112809-27-5P
112809-28-6P 112809-29-7P 112809-30-0P 112809-31-1P 112809-34-4P
112809-35-5P 112809-36-6P 112809-37-7P 112809-38-8P 112809-39-9P
112809-40-2P 112809-41-3P 112809-42-4P 112809-43-5P 112809-44-6P
112809-45-7P 112809-46-8P 112809-47-9P 112809-48-0P 112809-49-1P
112809-50-4P 112809-51-5P 112809-52-6P 112809-53-7P 112809-71-9P
112809-73-1P 112822-29-4P 133981-86-9P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation of, as estrogen biosynthesis inhibitor)

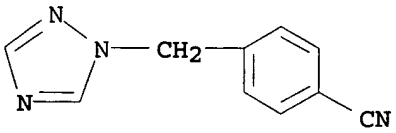
IT 79-44-7, Dimethylcarbamoyl chloride 90-96-0, 4,4'-Dimethoxybenzophenone 104-88-1, 4-Chlorobenzaldehyde, reactions 109-94-4 288-32-4, Imidazole, reactions 288-88-0 612-12-4, α,α'-Dichloro-o-xylene 822-36-6, 4-Methylimidazole 874-86-2, α-Chloro-p-tolunitrile 882-33-7, Diphenyldisulfide 1194-02-1, 4-Fluorobenzonitrile 10297-05-9, 1-Chloro-4-iodobutane 17201-43-3, α-Bromo-p-tolunitrile 30525-89-4, Paraformaldehyde 42498-38-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in preparation of aromatase inhibitors)

IT **112809-25-3P 112809-26-4P**
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation of, as estrogen biosynthesis inhibitor)

RN 112809-25-3 HCAPLUS
CN Benzonitrile, 4-(1H-1,2,4-triazol-1-ylmethyl)- (9CI) (CA INDEX NAME)



RN 112809-26-4 HCAPLUS
CN Benzonitrile, 4-(1H-1,2,4-triazol-1-ylmethyl)-, monohydrochloride (9CI) (CA INDEX NAME)



● HCl

=>